

Institute for Democratic & Economic Affairz

IDEAz - Guide to Good Health & Fitness



For private circulation only

- With Best Wishes from
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Institute for Democratic & Economic Affairz (IDEAz)

IDEAz - Guide to Good Health & Fitness

INTRODUCTION:

IDEAz, is a private, 'Not for Profit - Think Tank' which aims to determine pragmatic solutions to the problems our Country faces and recommend necessary policy/action. (See www.ideaz4india.com).

IDEAz also seeks to address social, moral, ethical and health issues that we all face continuously with the aim to encourage people to better understand them and thus to arrive at proper actions to resolve them the right way, and thus to also improve their quality of life.

IDEAz, with this aim, is pleased to wholly endorse and make available to all members, employees, friends and families and other interested persons, these guidelines for "Good Health & Fitness", in the interest of spreading the message of wellness and fitness for everyone

This programme has been tried successfully by many. However, as a matter of abundant caution, it is advisable to consult your Physician before starting any diet or fitness programme, especially if you are on medication or pregnant. Do request your Physician to read these guidelines too.

This programme will also improve your attitude and emotions because of its systemic effects.

These guidelines have been excerpted from many books and articles, though mainly from the "The 4-Hour Body" by *Timothy Ferriss*, which should be read for a better understanding. *Ferriss* has seriously researched and experimented across this field looking at research and results that may not become common knowledge for at least 10 years and has integrated a lot of earlier knowledge and the latest research and effective methods into a very comprehensive and even more effective and practical programme, containing the collective wisdom of hundreds of elite athletes, dozens of MD's and scientists and thousands of hours of extraordinary personal experimentation. (See below for a brief bibliography for the other major books referred amongst many others).

In the last 10 years or so a better understanding of what Health or Fitness really is, and how to attain to it, is being realized. This article only seeks to summarize the key points as a guide for those who seek to implement a practical regime at whatever age they may be, and whether they are vegetarians or non-vegetarians, and who do not have the time or inclination to read these books and extract the essence thereof for themselves.

"As to methods, there may be a million and then some, but principles are few. The man who grasps the principles can successfully select his own methods" - *Ralph Waldo Emerson*.

Understanding Good Health & Fitness

The first and most important requirement is that each of us end-up with a body shape and condition that we each consider good for ourselves. Muscles and fat in the right proportion and in the right places as suits our body type and a general fitness level that allows us to do what we need to do each day

We each need to work on getting from where we are now to where we want to be in the shortest time possible and with the minimum effort (of Diet-Drugs / Supplements-Exercise). Anything more than such a 'Minimum' would only be a waste of effort and time and may also lead to undesirable effects such as injury, stress and tiredness.

What is given below is such a regime. To be followed fairly strictly till you reach your goal and that may then be relaxed as you deem convenient, but under constant self monitoring to remain, not at a specific weight or size but within +/- 5% of that weight or more importantly, the size you deem desirable.

Good Health means the body is functioning properly with an immune system that satisfactorily resists the illnesses caused by routine exposure to common pathogens and pollutants etc.

Good Fitness means the person is easily able to do all that he/she needs to do during the day without injury or undue stress.

All this will come from following a right regime of:-

- Diet - What you eat & drink and when you do so.
- Drugs – are actually Food supplements, Condiments and medicines that you take to maintain or boost your immune system. Some drugs are safer than others, but almost anything will kill you at a high enough dose, even water or aspirin. It is the dose that makes anything a poison. The doses recommended herein are deemed safe. However do consult your Physician, especially if you are on any medication or are pregnant.
- Exercise - The breathing and movement system that you follow to keep your mind and body as fit and flexible as required to allow you to meet the daily demands on each.

You need to understand the effects of each of the above and then decide on the most effective proportion of each to best attain your goals.

Everyone has an opinion or an anecdote to share about the best regime to follow to attain to good health and fitness. Many have written articles and books on such subjects and many of them have even become millionaires doing so, even if their followers have not really attained to long term satisfactory levels of health and fitness with reasonable effort. Hence the continuing cycle of the introduction of ever newer and allegedly more effective diet, or drug / supplement, or exercise regime.

Many of us too have long been practitioners of many such regimes and have been disappointed every time by the long term in-effectiveness or impracticability of such regimes.

Linda Bacon, Professor of nutrition at the City College of San Francisco and author of 'Health at Every Size; The Surprising Truth about Your Weight', writes that weight is a baseless measure for health, and weight loss a counterproductive goal.

The long held belief that obesity leads to disease and early death is wrong, except perhaps in the case of the very obese and there is a general confusion about what really defines such obesity. The standards based on the Body Mass Index (BMI) can only be an indication and not the rule to determine obesity. A 2005 report in the Journal of American Medical Association, showed that people classified as overweight live longest, with those moderately obese achieving longevity comparable to that of people at “Normal” weights.

Unnecessary focus on even slight obesity leads to food and weight preoccupation, eating disorders and stress that in turn initiates or aggravates ‘Obesity related’ conditions like diabetes and hypertension. The solution? - Dump the weight focus. Dispense with rigorous food rules and calorie restrictions that one cannot easily maintain for long. Tune in to your body’s natural hunger signals and re-learn which foods are satisfying, as nutritional levels vary wildly from one person to the next. Exercise or move in ways that feel good.

This programme is easy to understand and follow. The physical changes of following this programme are incredible, but the other beneficial side effects soon become the strongest incentive to continue. This programme makes you a better all round human being.

Your body is almost always within your control. Controlling your body also puts you in your Life’s driver’s seat.

Whatever your age and fitness level now, be assured that it is never too late to reinvent yourself! This programme improves well being, lowers blood pressure and cholesterol while elevating self esteem.

IDEAz therefore recommends you follow this programme to a healthier and fitter “You”.

Finally, don’t set unrealistic goals. Your aim should only be to get yourself to be healthy and to feel good about yourself. “Dump the weight focus and lose the stress that itself can aggravate ‘obesity related’ conditions, like diabetes and hyper tension. Stop worrying about food rules and calorie restrictions. Tune into the body’s natural hunger signals and relearn which foods are satisfying. Move in ways that feel good. Be at peace with your body”.

Now get started on this Programme and see your Body improve!

Understanding the Programme

Dieting is generally frustrating as in practice biological feedback loops prevent most people from maintaining weight loss. Then why should one expect any better from the 'Slow Carb' diet as recommended by *Ferriss* in his book '4-hr Body' and herein. It is because he takes such feedback loops into consideration and the changes he suggests are either small or simple, and often both. There is zero room for misunderstanding and visible results compel you to continue. If results are fast and measurable, self discipline isn't really a problem.

Small, simple things can lead to unusual solutions to long standing problems.

The process isn't hard. Tiny changes are all that is needed. Tiny changes that while small in isolation produce enormous changes when used in combination.

- Timed doses of garlic, sugar cane and tea extracts, among other things.
- Want to extend the fat-burning half - life of caffeine? Naringen, a useful little molecule in grape fruit juice, does the trick.
- Over fat? - Try timed protein and pre-meal lemon juice.
- Under muscled - Try ginger and sauerkraut.
- Can't sleep? - Try upping your saturated fat or using cold exposure.

Suffice to say for uncommon solutions, you have to look in uncommon places. Thankfully *Timothy Ferriss* has done the looking and trying out for us. However you still remain the arbiter of your health and so please do consult your Physician before starting the programme, especially if you are on any medication.

The exercise component of this programme is a triumph of economy of effort over excess. The Pareto principle shows that 80% of the effect comes from just 20% of the effort and in most cases 2 to 3 % effort gets you over 95% of the effect.

This tiny effort is the key to rapid body re-design and performance enhancement, and is enough for the 90% of the people who are not in the incremental gain status of competitive athletes and body builders, and can thus experience near unbelievable gains in a short-time.

"Know the rules well, so you can break them effectively." - Dalai Lama.

Timothy Ferriss calls on you to:

First understand the Minimum Effective Dose (MED) for anything. Doing more is a waste of effort and time. As *Ferriss* puts it - "To boil water, the MED is 100°C at standard air pressure. Boiled is boiled. Higher temperature will not make it more boiled. Higher temperature just consumes more resources that could be used for something else more productive."

Then, in the context of body redesign, keep in mind the two fundamental MED's

1. To remove stored fat - do the least necessary to trigger a fat loss cascade of specific hormones.
2. To add muscle in small or larger quantities - do the least necessary to trigger local (specific muscles) and systematic (hormonal) growth mechanism.

This takes surprisingly little. Don't complicate things. For eg: to activate local growth of say shoulder muscles might require only 80 seconds of tension using 20-25 kg weight once every 7 days. 80 seconds is crucial as the existing glucose and oxygen stored in the muscles need to be used up before the muscles get duly effected.

For the over 60 years age persons a cardio vascular workout could be an act as little as lifting your two year old grandchild, or more safely an equivalent weight in a smooth move from a half squatting position to over head once a day and also walking up a flight of only 7 steps 5-6 times a day.

As the adage goes – 'lose it if you don't use it'. This also holds for a proper sense of balance. As you grow older you no longer 'hop – skip & jump' or walk on a balance beam etc and hence use soon lose your sense of balance. It is this loss that causes falls and the risk of broken bones. Therefore introduce some balancing exercises to be done every now and then (Yoga or Tai Chi). Test your balance by seeing how long you can stand on one leg with your eyes closed and the opposite knee lifted waist high. Please have a friend standing by as you try this. Try to build up to 30 seconds on each leg. For the over 60 years old even 10 seconds is good.

Other things for fat loss could be things like - 10 minutes of 12^o -15^oC water immersion or shower, or 200 mg of Allicin extract before bed. These are the type of prescriptions *Ferriss* offers.

Calories in and calories out is attractive in its simplicity but it doesn't work as expected, what really counts is how much of such calories get into your blood stream. The body is not a machine, it is an open thermodynamic system, an organism that self regulates and repairs itself to a great extent and reacts specifically to temperature, the nature and timing of the food and supplement intake and exercise etc and to the many hormones, enzymes and amino acids released by the micro flora within it.

Remember!

1. No exercise really burns that many calories-

eg: The calories in a cream biscuit would need you (as a 100 kg male) to climb up 27 flights of stairs to burn them off. The caloric argument for exercise can therefore get very depressing. Things that affect calorie allocation, out of the calories that actually get into your blood stream and thus count and that can be modified for fat loss and muscle gain - include digestion, the ratio of Protein to Carbohydrates to Fat and the timing of consumption.

Hormonal responses to Carbohydrates, Proteins and Fat are different. Protein provokes a greater thermic effect than either Fat or Carbohydrates, i.e: in digestion a higher percentage of Protein calories are 'lost' as heat: vs: in the case of Carbohydrates and Fat. Scientists therefore suggest that the Protein calories be discounted by 20%. This is the basis of the 'fat burning foods' diet, but like all other diets this is too restrictive and is not really maintainable for long and so also the many 'Shakes' which promise weight loss but offer no clear evidence that one can stay on them for long, unlike the 'Slow Carb' diet herein.

2. You should better study & understand two other pathways: heat and hormones.

3. Start with a reasonable target of weight loss say 5 to 8 % of your present body weight over 1 to 2 months.

This may not be real weight loss, but total body re-composition to get the same visual effect. Say, losing 7 kg of fat and gaining 2.5 kg of muscle, or some blend in between. A subtraction and an addition that aims at the best physique. Even if you have more fat to lose, start with an initial aim as above. The rest can be targeted in stages to follow later. Motivation comes from achieving your goal each time.

You may reach this goal only by dieting but you will do better with a proper combination of the three things as below:

Diet - Drugs / supplements - Exercise

Ferriss suggests - 60% Diet - 10% Drugs / Supplements - 30% Exercise, as a practical methodology.

But this ratio can be adjusted suit to your personal preferences. **Then stick to it!**

4. Eating low carbohydrates-high / protein diet causes a reduction of appetite and an ingestion of lower calories. Also all calories are not alike. It is what happens to them as they go through your body and interact with the micro flora and conditions therein that counts. It's what makes it into your blood stream. If it just passes through it doesn't count.
5. When you have an aim, find a way to count the steps, to measure some parameter towards it. Count calories or count inches or count number of repetitions of an exercise, anything - but count or measure something. Tracking even a mediocre variable, which is directionally right, will help you develop awareness that leads to the right behavioral changes. Just make what you measure everyday slightly better than it was the day before.

"What gets measured, gets managed" - Peter Drucker

Remember the decent method you follow is better than the perfect method you quit.

Forget common marketer words such as:

Aerobics, Toning, Firming, Shaping and Cellulite. Cellulite is nothing special it is only fat and can be removed in the same manner. Forget even scientific sounding words such as optimal Health & Fitness, these escape precise definition and understanding. Optimal for what - be precise?

Ask yourself- can I measure this? If you can't measure it, it is meaningless.

Your programme should be specific in its actions and its goals. eg: I aim to lose "so many" kgs or "so many" total inches and so on.

Things to measure before you start:

Be consistent in using the same manner and the same scales to measure as you progress. Starting a body re-composition programme without measurements is like planning a trip without a start address. You will definitely regret it later. Never compare before and after results from using different tools.

1. Health Profile Tests including Lipid levels and levels for essential vitamins & minerals.
2. Percentage of body fat - (ideally use 'Body Metrix' - a hand held ultra sonic device that measures the exact thickness of fat wherever you place it) you may also use a bio-electrical impedance device but this would require you to be equally hydrated at each time, or you may go by the results at the same diagnostic lab. You may also undergo a Dual Energy X-Ray Absorptiometry (DEXA) test, which in addition to bone density also provides information on body fat and on muscular imbalances in different zones in your body and allows you to work on them to avoid injury or unnecessary stress during exercise.
3. Take your "before" circumference measurements and total the measurements to arrive at your total inches. Change in this total will be meaningful enough to track. For the really conscientious, taking an average of 3 measurements of each will cancel out any errors.

- Average of Both upper arms (Mid Bicep) with arm straight
- Waist (horizontal at navel)
- Hips (at widest point between navel and legs)
- Average of Both legs (mid thigh)

Also take these additional measurements to note the general improvement that will also further encourage you. However these measurements only for information and are not part of the measurement total that you need to track regularly.

- Average of Both upper arms (Mid Bicep) with arm flexed
- Chest at nipple level
- For women - also chest below breasts
- For Men - Shoulders

4. Weight - As far as possible use the same scale and measure at the same time of the day.

Consider your gain of useful muscle and loss of useless fat and not only weight loss. Building muscle is one of the best ways to burn fat.

5. **Suggested target figures for percentage body fat:**

For obese men	-	aim for 20% body fat
For slightly fat men	-	aim for 12% body fat
For obese women	-	aim for 25% body fat
For slightly fat women	-	aim for 18% body fat

Understanding how these percentages are visibly different:

a. For Men:

20% body fat - no visible muscle definition and only a hint of separation between muscle groups

15% body fat - some muscle separation appears between shoulders (deltoids) and upper arms.
Abs are not visible

12% body fat - more muscle separation appears and outline of Abs begins to appear

10% body fat - muscle separation gets deeper in the arms, legs, chest and back and 6-pack Abs are visible when flexed.

b. For women:

The definitions will be much less at each level of body fat. They need have no anxiety about becoming too muscular. The loss of total inches will be a better measure of the right deposition of fat or muscle in the right places.

Women tend to retain much more water just before their periods and should take this into account when they start this diet and take measurements. A day or two after the periods is probably the best time.

6. Suggested targets for waist to hip ratio (WHR i.e. waist Circumference / Hip Circumference) and for men also the waist to shoulder ratio (WSR i.e. waist Circumference / Shoulder Circumference).

Men - WHR - 0.8 to 0.9 and WSR - 0.6

Women - WHR - 0.7

These are ideal ratios and all may not attain to them, but anyone can improve their ratios to be closer to the ideal than what it is now and that is more attractive.

Motivating yourself:

1. Take digital photos of yourself from front, back and side in under wear or a bathing suit. Put the least flattering photo where you can see it often each day.
2. Find atleast one person to engage in a friendly competition using either 'total inches' or 'percentage of body fat'. Comparing weight can be an option but it is a poor substitute.
3. Ignore others opinions on your programme. Everyone has an opinion and theories about what to eat, drink and how to exercise. But the truth is most of such opinions are only 'hot air'.
4. Take the pressure off yourself by looking at what you need to do as something you are committed to for at least a week though preferably for 5 weeks. Even exercise. Start by doing something small. Initially determine to stay committed to at least five weeks; the rest will take care of itself as the results will then motivate you further. 5 measurements are minimum necessary for motivation, so at whatever interval you measure make it for at least 5 measurements.
5. Keep a daily diary of what you ate or did or measured and at what time. This will help you analyze your progress or track the reason in case you did not progress as well as expected.
6. After the first few weeks, gain in muscle can keep you at the same weight for one or two weeks, but the measurements will continue to be encouraging. (See 'Plateauing Weight Loss' - below)
7. Don't worry about maintaining some sort of a balance. Planned and timed cycling in diet or exercise is more beneficial.

To failure proof your attempt to attain your goal:

- Make it conscious - keep seeing the before photos and measurements.
- Make it a game - record measurements - it adds to motivation.
- Maintain it at least for one week, though preferably for 5 weeks.
- Make it competitive - embrace peer-pressure.
- Make it small and temporary - Take the pressure off. Commit to one week or two weeks at a time, the results will take care of your motivation for continuing the programme.

Awareness, even at a subconscious level, beats fancy checklists without it. Track your changes or you will fail.

"Even if you are pre-disposed to be overweight it does not mean you are pre-destined to be fat".
Timothy Ferriss.

The Slow - Carb Diet Compared:

What constitutes a healthy diet has been more a matter of opinion than of science because there have been few good studies to settle the issue. But a paper in The New England journal of Medicine describes a well-designed, randomized, controlled study of human nutrition. They tested three diets: a low-fat diet; the high-fat diet, low-carbohydrate high protein regimen commonly called the Atkins diet (similar to this programme); and the Mediterranean diet, which includes lots of olive oil, grains, fruits, nuts and fish and little meat or dairy products.

The two-year study found that both the Mediterranean and the low-carbohydrate diets are better for weight loss than a low-fat regimen and have other beneficial effects as well.

The low-carb had the greatest increase in HDL, the so-called good cholesterol. C-reactive protein levels, a risk factor for heart disease and other illnesses, decreased in both the low-carb and Mediterranean, but not in the low-fat. In short, the researchers found that both the Mediterranean and low-carb diets are effective alternatives to the low-fat regime for weight loss and are just as safe, but the 'low-carb' is most effective.

How to lose about 8 to 10% of your body weight in 30 days without exercise and ensure proper fat loss for better body shape. Ofcourse a little exercise of the right type and at the right time will help get better results as otherwise you may lose fat but not necessarily from where you want to.

It is possible to lose 5 to 8 % of your body fat in 30 days without exercise and also ensure proper fat loss for better body shape. However for best results you should work at optimizing the ratio of all the 3-factors given below:

Diet - Drug/Supplement regime as may be required - Exercise

Diet by itself is quite effective as long as you follow the Rules. However for better and more rapid effect the combination is best. Right supplements at right dosage help to maintain better health and a few exercises of the right type and at the right time will lead to even better fitness and fat redistribution. So it is advisable to incorporate all of them into your programme even if you choose to do so in stages.

Important: Even though this diet has not been found to have any negative effects, do consult your Physician, especially if you are on any medication.

The Diet Rules:

There are just 5 simple rules to follow for the diet: with an optional 6th rule for fasting and a 7th rule regarding timings.

Rule#1: Avoid 'white' Carbohydrates

Sugar, all breads, rice (including brown), cereals, potatoes, pasta, tortillas and fried food with breading and anything else white, and even milk, however cottage cheese, unsweetened butter milk and yoghurt are allowed. Also vegetables like cauliflower / cabbage etc though white are allowed.

Milk products though having a low glycemic index have a high insulemic index. If you must flavor your tea or coffee use cream not milk and restrict it to less than two table spoons a day. A few drops of cinnamon may be a good substitute.

See "Understanding of effect of Sugar & Carbohydrate in our diet"

Rule#2:

For ease of preparation and compliance eat the same few meals over and over again, especially for breakfast which you must finish preferably within 30 minutes or a maximum of ONE hour of waking up. Mix and match from the following list, constructing each meal with atleast one pick from each of the three groups. Vegetarians will obviously avoid the first group. It may seem boring but the results will be encouraging and anyway there is a feast day to look forward to! (See below). Eat larger quantities of legumes and vegetables to compensate for the low calorie value of the foods. To avoid the chance of becoming allergic to any continuously eaten foods, change your main protein source and staple meals every month or so, also avoid gluten (see Gluten free food list below). The choices that seem to produce the fastest fat loss are starred.

1. Animal Protein

- *Egg whites 1-2 with atleast one whole egg for flavor (or if organic 2-5 whole eggs including yolks)
- *Chicken breast or thigh
- *Fish
- Pork
- Mutton

Animal protein isn't necessary, but it does make the job easier. Don't worry too much about cholesterol in the eggs. Remember cholesterol is an essential material for your body and that it is your liver that produces over 80% of your body's cholesterol. The rest comes from your diet (meat, eggs and dairy products etc) but their effect is reduced by adding Phytosterols (a vegetarian substance with similar molecular structure to cholesterol) to your diet. It competes with cholesterol for absorption by the lower intestine and hence reduces cholesterol absorption. Best sources for Phytosterols are compatible with this diet (sesame oil, nuts and seeds, peanuts, almonds, cashew, cauliflower, onions, legumes, peas and beans).

2. Vegetable Protein

- *Lentils (Dals / Pulses)
- *Black Beans
- Red Beans
- Soya Beans
- Borlotti Beans

Don't worry about protein intake and gout. There is no satisfactory scientific research evidence to support the 'protein hurts your kidneys' claim. As for gout -*Gary Taube* - the author of 'Good Calories, Bad Calories' notes that research suggests fructose, sugar, sucrose and other factors are more likely causal agents. Drink plenty of water.

If your breakfast proteins are atleast 30% of your diet then resting metabolism increases by about 20% and water retention decreases.

3. Other Vegetables

- *Spinach
- *Mixed vegetable (including other cruciferous vegetables)
- *Sauerkraut
- *Kimchee
- Asparagus
- Peas
- Broccoli
- Green Beans
- Cauliflower
- Cabbage

Vegetables are not limited to only the above. You can add to them as you like. Fresh may be better but canned is also alright, only watch the salt content. However do not fixate too much on salt intake. Latest research shows salt is not as much the villain as it has traditionally been made out to be. Unless you really go out of the way to add extra salt you don't have to worry. The usual salt most people ingest makes only a point or two difference in the blood-pressure reading which is within the measurement error.

Eat as much as you like of above food items, but keep it simple. Pick 3 or 4 meals and repeat them. Eat meals approximately 3-4 hrs apart. (See timing below). Stirfry is ideal for this diet because of the breeding of deep fried and the already poor nutrient density of vegetables. Frequent hunger is a major

indication that you are not eating correctly, that you are consuming the wrong types of food, in incorrect ratios.

Eating low carbohydrate diet with insufficient calories can lead to a feeling of low energy. Eating more than 4 times a day might be helpful on higher-carb diets to prevent gorging, but it is not necessary for the slow-carb diet. Eating more frequent meals also appears to have no enhancing effect on resting metabolic rate despite claims to the contrary.

Avoiding curries is recommended as they may cause intestinal upset without the rice or roti that usually goes with them.

Rule#3:

DO NOT drink calories.

Drink massive quantities of water and as much unsweetened tea, coffee (with no-more than two table spoons of cream per day. You may sprinkle a little cinnamon instead)

DO NOT drink Milk, normal soft drinks or fruit juice. Except on feast/binge days.

Phosphoric acid in carbonated drinks is to be avoided. Fresh lime with water and without sweeteners is fine.

Consumption of sugar sweetened beverages is associated with a higher risk of obesity, diabetes and heart disease.

DO NOT drink white wine or beer. A glass or at most two of red wine per night may be consumed but it is NOT necessary for this Diet.

Rule#4

DON'T eat FRUIT. Humans don't need fruit six-days a week and they certainly don't need it year-round. Just say no to fruit and its principal sugar fructose which adds fat more efficiently than almost all other carbohydrates. Glycerol Phosphate - to - Triglycerides (via the liver) - to - Fat storage.

Avocadoes (one cup per day) and Tomatoes are allowed. No sweet corn

Absolutely avoid a high-fructose diet. It increases cholesterol levels and doesn't do the body any good. Fructose has been reported to affect homeostasis, absorb trace elements and to increase iron deposition. Excess iron can be toxic. Men are mainly at risk as menstruation allows women to clear excess iron.

Also see 'Understanding why eating large quantities of fruit may not be healthy'.

Fructose intake also decreases the activity of the copper enzyme super oxide - dismutase (SOD) and reduces the concentration of serum and hepatic copper.

There are a few bio - chemical exceptions to this, but avoiding fruit six days per week is the most reliable policy. It is the seventh day that allows you, if you so desire, to eat all the fruit you want.

Rule#5:

Take one day off per week and on this day (Feast or binge day) eat whatever you desire and as much as you want. Binge to your heart's content.

Say Sunday, on this day you are allowed to eat whatever you like (No Calorie counting and no limits on gluttony), especially those foods that you have been missing terribly throughout the previous week. This will not only help you maintain your diet but such dramatic spiking of calorie intake this way once per week increases fat loss by ensuring that your basal metabolic rate doesn't go down due to extended calorie restrictions.

It is important to spike calorie intake once per week. This causes a host of hormonal changes that improve fat loss, from increasing cAMP and GMP to improving conversion of T4 thyroid hormone to the more active T3. The psychological benefits outweigh even the hormonal and metabolic benefits.

Weigh yourself before your first meal on the feast / binge day and ignore the short term fluctuations. Also remember to take the circumference measurements on your weigh - in days. Weight can lie but measurements don't.

Feast day Result.

Expect massive weight fluctuations after feast/binge day, Relax. It is mostly water retention due to extra carbo-hydrates and will disappear over the next 48 hours. If you want to reduce the weight gain on this day, then eat a high-protein meal for breakfast on this day and binge from this to dinner. Eat some Grape fruits for the Naringin and a small fructose dose just before the 2nd meal of the day - the 1st binge meal on a feast day. This helps to nearly flat-line your blood glucose levels. To further limit the adverse effects on fat caused by such binges you may try the following.

Increase insulin sensitivity before bingeing once a week by just adding some cinnamon to your pastries or whatever, on that morning.

Blunt your blood glucose for 60 minutes while you eat a high carb meal guilt-free by having a small fructose dose just prior to the meal. Also follow the principles given under a Feast/Cheat/Binge section below.

Rule#6 (Optional):

(This is optional and not originally suggested by *Ferriss*). Keep one day a week as a Fast day say either Tuesday or Thursday or Saturday. This allows your metabolic system to strengthen itself without resetting your resting metabolic rate. Something similar to doing an exercise with - heavy weight repetitions to break muscle fibres and cause them to heal bulkier and stronger as the response of an organic repair system which responds to reasonable unexpected stress by making itself stronger. Such intermittent fasting can also have life - extension effects.

For convenience of application you could consider following the Diet from Monday to Saturday, fast on either Tuesday or Thursday or Saturday and feast on Sunday. But you can adjust the schedule to suit your life style.

Start the diet at least 5 days before your 'Fast' day. Say on Monday if fast day is Saturday. The fast need not be for a full 24 hours, 18 to 20 hours is acceptable, say from after Tiffin on the fast day to breakfast next day or from after the dinner the previous day to dinner on the Fast day.

Rule#7:

Meal Timings:

It is important that you be regular with your meal schedule.

The following meal schedule is only a guide line, feel free to modify it to suit your biocycle. Adjust your meals to fit your schedule, but make sure you finish your first meal within ½ hr or a maximum of 1 hr of waking.

Say you wake-up by 0600 hrs, then:

Breakfast	-	by 0630 hrs definitely not later than 0700 hrs. (This is CRITICAL).
Tiffin	-	by 1000 hrs (a handful of walnuts etc)
Lunch	-	by 1330 hrs
Tea / Tiffin	-	by 1700 hrs (light snacks lentil / dal or vegetable/ onion pakoras)
Dinner	-	by 2030 hrs
To Bed	-	by 2130 to 2200 hrs

Adjust to suit your sleep-wake cycle.

To ensure that you are able to have your high protein, even if light breakfast, on time it is recommended that you either prepare the breakfast the night before and micro-wave it and eat or you have 2 boiled eggs with some boiled vegetables within the time and have little more to eat may be an hour or two later.

Note for Vegetarians:

High calorie vegetarian meal plans are hard to digest. Diets high in plant foods contain a ton of fibre and lectins. Fibre is good for us in the right amount, but in excess it prevents the digestion and absorption of other nutrients especially of often essential minerals. It also upsets the stomach, leading to diarrhea, gas and bloating. Also many people are lectin intolerant. Further, lectins can be problematic in and of themselves. eg: phytic acid - interferes with calcium, zinc and copper. Trypsin inhibitors and lectins, which act as enzyme inhibitors, prevent proper digestion and lead to bloating. This is one of the reasons vegans can eat plenty of everything and still end up nutritionally deficient.

Getting enough amino-acids in a vegetarian diet everyday is difficult but can be done with guidance from a good nutritionist. (It is easier if you allow yourself 2-3 eggs per day or a proper protein shake with iced water as a supplement, say Whey Protein Isolate)

Feast / Cheat / Binge Eating:

If you plan ahead of time and understand a little science, it is possible to limit the damage. Eat whatever you want on your Feast / Cheat / Binge eating day while following specific steps to minimize fat gain during this overfeeding.

The goal is simple: to have as much of the wrong calories ingested either go into muscle tissue or out of the body unabsorbed.

For this focus on 3-principles:

Principle # 1:

Minimize the release of insulin, a storage hormone. Insulin release is minimized by blunting sharp jumps in blood sugar by:

- a. Ensure that your first meal of the day is not a large meal. Make it high in protein (atleast 30 gms) and insoluble fibre (legumes). The protein will decrease your appetite for the remainder of the binge. The fibre will be important later to prevent diarrhea. This can be a small meal of 300 to 500 calories.
- b. Consume a small quantity of fructose, fruit sugar, in grape fruit before the second meal, which is the first binge meal. Avoid fruit juices. Even small fructose dosing has an impressive near-flat-lining effect on blood glucose. You may even consume this with the first meal, but if you are a coffee drinker at this meal it is better to have it now as the naringin in grape fruit juice combines with coffee and extends the effects of caffeine.

Fructose has a large and very extended glucose-lowering effect, but low blood glucose does not always lead to more fat loss. Better limit the juice (say 1 glass orange juice) or whole fruit to 30 mins before the highest GL meals on the binge day.

- c. **Use supplements that increase insulin sensitivity:** AGG (part of PAGG) and PAGG (See understanding supplements). This reduces the amount of insulin the pancreas release in spite of mild or severe glucose sugar. Think of it as insurance.
- d. Lemons have amazing effects on your health. Consume citric juices, whether lime juice squeezed into water, lemon juice on food, or a beverage. Lemon is best used whole (Frozen and grated and sprinkled on all your foods. It adds an unexpected and wonderful taste, even to desserts). The peel has up to 5 to 10 times more vitamins than the juice alone and also helps in eradicating toxic elements from your body and also has an anti-microbial, anti-fungal, anti-intestinal parasite action and also a very strong anti-cancer effect, said to be thousands of times stronger than even standard chemotherapy, with none of the associated ill effects. It also reduces the glycemic response by about 10%.

Vinegar, counter to expectations, doesn't lower Glycemic response. Lemon juice does (by about 10%). So you may have about three table spoons of fresh squeezed lemon juice just prior to eating. Combine it with cold water to make it more palatable.

Principle # 2:

Bingeing can increase the glycemic index of the meal and hence it is more important to blunt the response with a small dose of fructose, eat a fruit 30 minutes before the meal. Also Bingeing is the rare circumstance where you would want the food (or some of it) to pass through the gastro - intestinal tract so quickly that its constituents are not absorbed well. Caffeine, theobromine (found in dark chocolates) and theophylline (found in Green tea) help this aim. Also an important trigger for gastric emptying is causing pressure on the stomach by gulping instead of sipping water.

Principle # 3:

Engage in brief muscular contractions throughout the binge day.

Air squats, wall presses and chest pulls with an elastic band or springs can be done anywhere without causing muscle trauma or screwing up any training.

This brings glucose transporter type 4 (GLUT-4) to the surface of muscle cells, opening more gates for the calories (glucose) to flow into and hence the put more glucose into muscle instead of into fat.

"The insulin-independent effect of exercise begins to reverse minutes after exercise cessation and most or all of the increase lost within 1-4 hours". - Dr. Gregory D. Cartee and Katsuhiko Funai.

The schedule could be 60-120 seconds total of air-squats and wall-presses immediately prior to eating meals and another 60-90 seconds approximately 90 minutes after finishing the meal, when the blood glucose is expected to be highest.

Start with as many repetitions as you can comfortably do and go up to a maximum of 30-50 repetitions of each. If even this is difficult, try walking for a few minutes and do some isometric contractions of especially the leg muscles.

Don't forget the air squats.

A Chinese proverb that says that if you take 100 steps after each meal (and ideally some even before), you can live to be 99 years old, seems to confirm the validity of this effect. You may follow this advice for walking even on non-feast days.

Supplements:

This diet will cause you to lose excess water and electrolytes that go along with it. Hence *Ferriss* recommends you go for supplements especially potassium, magnesium and calcium and a multi vitamin with B-12 and calcium 500mg with vitamin-D - twice daily with food.

Check your selenium and magnesium and take supplements if necessary. Magnesium citrate - 400mg/day for men and 300mg/day for women.

Use 'Losalt' enriched with potassium, or sea salt. Eat Avocadoes which in addition to extra potassium also have high soluble fibre.

Prebiotic and Probiotic supplements will also help in maintaining the right balance of micro-flora in your gut.

Though not essential these are some other simple supplements that can also be taken to further improve fat loss and muscle gain. Also see 'Understandings Supplements' - below

- a) Policosanol - 20-25 mg
- b) Alpha - Lipoic Acid - 100-300 mg with each meal but reduce dosage if experiencing acid reflux syndrome.
- c) Green Tea Flavonoids - (decaffeinated extract pills with at least 325 mg EGCG) - 325 mg
- d) Garlic extract - at least 200 mg can go up to 650 mg
- e) 'Cissus Quadrangularis' (CQ) - 2.4 gmsX3 for additional muscle growth for a maximum of 6 to 8 weeks only.

If you are exercising, to help prevent soreness and speedup muscle repair, you may also consider taking:

1. L-Glutamate - 80 gms per day for the first 5 days. Take 10 gms every two hours on the dot till 80 gms is reached. Thereafter take 10-30 gms post workout on exercise days. It not only works as a post work-out supplement for tissue repair but also works for intestinal repair.
2. Creatinine Monohydrate - **Take for only the first 28 days.** Consume @ 3.5 gms up on waking and again before bed. If you use powder then mix-in 5-6 gms to compensate for losses in solution (avoid if having kidney conditions). It increases maximal force production and protein synthesis.

Supplements Timing:

If you decide to take these additional supplements, then as the

Daily PAGG intake is timed before meals and bed, in a schedule like this:

Prior to breakfast: AGG (PAGG without the P - Policosanol) + CQ optional & taken 30 mins prior to meal

Prior to lunch : AGG + CQ optional & taken 30 mins prior to meal

Prior to dinner : AGG + CQ optional & taken 30 mins prior to meal

Prior to bedtime : PAG (omit Green Tea extract and CQ)

Follow this dosage schedule 6 days a week. Take one day off every week and one week off every two months. **This week off is critical.**

Warning:

Ensure adequate consumption of B-complex vitamins while using PAGG and consult your doctor if you have a medical condition (eg: hypertension, hypoglycemia, diabetes) or are taking any blood thinners medications (eg: warfarin, aspirin etc), thyroid medications or anti-anxiety drugs. Avoid PAGG if pregnant or breast feeding.

CQ - must be discontinued after 6-8 weeks

Maintaining good Hormonal levels:

What *Ferriss* calls the - “Darwins Rule” - eat for optimal fertility and everything else falls into place.

1. Fermented cod liver oil + vitamin rich yellow butter fat from grass fed cows - 2 capsules on waking and before bed (vitamin K2).
2. *Vitamin D3 - 3000 to 5000 IU upon waking and before bed. Until you reach blood levels of 55 ng/mL or for 4 weeks. As excess vitamin D is not good for you, get tested every three months. Do not exceed 55 ng / ml.
3. *Brazil nuts - for selenium (3-nuts) and raw almond for vitamin-E (6) up on waking and again before bed. This is only if you are deficient in Selenium and vitamin-E, otherwise not required.
*As too much of vitamins is as bad as too little get tested every 2 or 3 months for all vitamin levels.
4. Use deep yellow butter from grass fed cows - rich butter fat or Ghee in your meals.
5. Sauerkraut, Kimchee and Japanese Nato and other such lacto fermented foods.

Take short ice baths and / or cold showers - 10 mins each upon waking and right before bed.

Understanding the Diet:

It is not purely over eating, it is what you eat and when that matters.

Excess sugar intake, large quantities of fruit (fructose) and too many carbohydrates all contribute to health problems.

The human body needs healthful fats and high quality protein for proper function. Replace some carbohydrates with more saturated fats. For optimal functioning the ideal diet as recommended by *Dr. Ron Rosedale*, MD, an expert on treating diabetes through diet, would have 50-70% fat, especially saturated fat. Fat is more satisfying than carbohydrates. Coconuts and coconut oil is good. So is butter and ghee derived from organic milk from grass fed cattle and eggs from organic pastured hens and meat from grass fed sources.

Food and liquids take much longer to get into the blood stream than one is inclined to think. Orange juice peaks in about 40 mins after drinking, while food does so only 90 mins to 150 mins after consumption even with yoghurt. This knowledge allows you to better coordinate your eating and drinking with your planned physical exertion.

Increasing fat content, and doing so earlier in the meal, blunts the glycemic response much more than protein. So eat good fat, preferably as a starter before the main course, say - 3 to 4 Brazil nuts or 4 to 6 almonds with a tablespoon of almond butter (or ghee) first thing upon waking.

More than Quality, it is the size and speed of meals that determine glycemic response. Eat slowly say in thirds, with a gap of about 5 mins between the thirds with iced tea or water with lemon juice in between. Drink more water to dilute digestion, eat smaller portions and chew more (say 20 times or even 32 times a mouthful), take longer time over your meals say 30 minutes. All these strategies serve to decrease the amount of food that gets digested per-minute and hence decrease your glucose levels. Do remember that it takes 20 minutes for your 'stomach full' signals to reach your brain.

For fastest fat loss, minimize your blood sugar jumps above 100 mg/dL to no more than two per day. The feast/binge day is the exception.

To do so on other days:

- Eat decent quantities of fat at each larger meal. Saturated fat is fine if the meat is untreated with antibiotics and hormones. Ghee is fine
- Spend at least 30 mins eating lunch and dinner. Breakfast and tiffins tend to be smaller and are thus consumed more quickly.
- Experiment with cinnamon and lemon juice just prior to or during meals.

Notes about the Diet:

1. Snacks:

There should really be no need for snacks. If you are hungry, you are not eating enough protein and legumes at each meal. So eat more. Expect to eat 2-3 times as much volume as your earlier calorie denser foods.

If all else fails and you must have a snack, go for a few carrot or cucumber sticks. Do not binge. If still hungry, eat an additional meal. A bag of almonds or walnuts (10-20 nuts) can make a meal. More will only increase calorie intake. As a rule avoid snacks which call for portion limitation.

2. Seasoning:

You can use spices and herbs but not cream based sauces. You can also use chilies and sea salt.

3. Cooking Oils:

Use butter, ghee and macadamia, canola, sesame and groundnut oils for all stove-top cooking. A high smoke point, high Mono-saturated fat and having a ratio of Omega-6 to Omega-3 at 1:1 or up to 6:1 would be best. Unheated organic nut oils are preferable.

Oil	Saturated Fat Lower the Better	Omega 6	Omega 3	Mono-saturated Fat Higher the Better	Smoke Point Higher the Better
Macadamia oil	16%	2%	1%	81%	199 ⁰ c
Canola oil	6%	26%	10%	58%	204 ⁰ c
Sesame Oil *	15%	42%	<1%	42%	232 ⁰ c
Olive Oil	14%	8%	1%	76%	216 ⁰ c
Sunflower Oil	11%	69%	2%	6%	232 ⁰ c
Coconut Oil #	92%	2%	-	6%	177 ⁰ c
Groundnut Oil*	7%	16%	-	-	232 ⁰ c
Ghee*	8%	-	-	30%	252 ⁰ c

* Good and is recommended in Ayurveda.

Good, even though saturated fat is high and omega -3 levels are negligible.

4. A high protein diet will soon cause your appetite to reduce and hence you will also eat less. However do ensure that you do eat enough vegetables and beans to get adequate insoluble fibre.
5. Meat isn't necessary. Eggs and beans are sufficient. Cottage cheese (paneer) and unsweetened yoghurt and buttermilk are only milk products that you can consume. The high casein content of cottage cheese and buttermilk appears to facilitate fat loss and the fermentation of yoghurt helps maintain proper balance of the micro flora in your gut.
6. Try to avoid soy products.

7. Eating eggs results in more fat loss and increased basal metabolism. Of two groups in a controlled study, no significant differences were detected, between the plasma total - HDL and LDL - cholesterol and triglycerides for those who ate eggs and those who ate bagels instead. Eggs yolks also provide choline, which helps protect the liver and increases fat loss. Choline metabolizes into betaine and offers methyl groups for methylation processes.

Vegetarians don't lose hope! Spinach is another primary source for betaine. Lentils (Dals) are a rich and cheap source of protein (amino acids), isoleucine and lysine in particular, which are noted for their role in muscle repair. Lysine also has an effect on glucose metabolism. Also increase cottage cheese intake. Remember eat greater quantities to compensate for relatively low calorie density.

Dals / Pulses are a branch of the legume family – peas, beans and lentils. They come in a range of colors and sizes and can be eaten whole, ground into flour or separated into their 3 main constituents, protein, fibre and starch. They have more protein and fibre than rice or wheat and provide vitamin-B, iron and zinc. They help control blood pressure. They supply protein without the fat and cholesterol associated with animal products. In India they are widely used to provide a range of breakfast and tiffin dishes.

8. Avoid deep frying as it leads to breading and reduces nutrient density. 'Vada/Gare' may be the exception as it is made from lentil (dal) and does not need breading. Other dal products like 'Kudum' (an oversize rice free idli), 'Chilla' and 'Pesarattu' (a type of dosa) and 'Dhokla', all made from dals may also be included. But do so only after the 1st week to allow more noticeable and thus motivating results.

Re-fried beans may contain unnecessary sodium. Hence limit their use. Increase the use of other beans. Food allergies - most problems are caused by gluten, which you shouldn't be eating much of in the first place; and you can at times create food allergies if you eat the same foods and same protein sources all the time. The fix - follow the slow carb diet and change your main protein sources and staple meals every month or so.

Gluten - Free Food List - Jane Anderson

Here's a summary of gluten-free foods, questionable foods and foods that aren't safe (see the preceding pages for more detail):

- **Fruits and Vegetables:** All fresh products should be safe. Watch out for pre-packaged fruit and vegetable products (including frozen and canned goods), which may contain gluten or be subject to cross-contamination.
- **Meats and Fish:** Fresh meats, poultry and fish with no added ingredients are safe if they're kept away from gluten cross-contamination at the store. Pre-packaged products, such as hams, bacon, sausages and lunch meats, may or may not contain gluten. Several manufacturers label processed meat products gluten-free.
- **Milk and Dairy Products:** Fresh plain milk, butter, plain yogurt, fresh eggs and many cheeses are gluten-free. Some other products found in the dairy section, such as tapioca pudding, are gluten-free. Some ice creams are gluten-free and some are not — you'll need to check ingredients.
- **Breads, Snacks, Cereals and Pastas:** With few exceptions, anything you buy in these categories should be specifically labeled “gluten-free”. Most grocery stores carry a few of these gluten-free staples, but you may find the best selection online.
- **Prepared Foods:** Only buy frozen dinners or frozen pizzas specifically marked “gluten-free” — some larger supermarkets carry a nice selection. Many canned soups contain gluten, so check the ingredients. Ethnic food sections in supermarkets frequently contain some prepared foods that are gluten-free.
- **Baking Mixes and Supplies:** Any baking mix you purchase should be specifically labeled "gluten-free." Most baking supplies, such as baking soda, sugar and cocoa, are considered gluten-free, but you should check ingredients to make certain.
- **Condiments, Sauces and Spices:** You'll need to check ingredients and/or call manufacturers in most cases to determine what's gluten-free and what's not. Heinz ketchup and French's yellow mustard are considered gluten-free, and there are multiple gluten-free options for tomato sauce and salad dressing. Don't buy soy sauce unless it's specifically labeled “gluten-free”.
- **Coffee, Tea, Soda, Fruit Drinks and Alcohol:** Unflavored coffee and plain black or green tea should be gluten-free, but flavored varieties may not be. The most popular sodas in the United States are considered gluten-free. Juice made from 100% fruit should be gluten-free, but fruit drinks made from fruit plus other ingredients may not be. You'll need to buy gluten-free beer, since conventional beer contains gluten. Wine is gluten-free (unless you're super-sensitive). Many people react to gluten grain-derived alcoholic beverages.

Exercise:

Be clear on what the aim of your exercising is and how much exercise you really need to do to attain to that aim. Are you exercising for weight control, or muscle gain, or improving sports performance, or injury management, or stress management, or for just general health and fitness appropriate for your age and daily needs? Anything more is just wasted effort. A combination of diet and exercise as you deem fit is the best way to attain your aim.

For general fitness, as against specific goal oriented exercise, especially for the over 60 age group, it is more important to have your internal organs functioning effectively. This is best achieved by a proper understanding and control of your diet and a programme of appropriate flexibility, balance and breathing exercises eg: yoga asanas (including Surya Namaskars) and Pranayama/Kapal Bhatti and a total of about 30 minutes of daily walking.

Don't confuse recreation or house work with exercise. Recreation is for fun and house work is a chore to be done. Exercise is for producing changes - application of measurable stimuli to decrease fat, increase muscle or increase performance. Do as little exercise as needed, not as much as you can. Three days a week is enough. Exercise one hour after a light protein rich breakfast. You may add 'Kapal Bhatti' and 'Pranayama' breathing exercises and some Yoga (including Surya Namaskar exercise) or Tai Chi on all days or only on non-exercise days as you deem fit.

Aim for a new body from the base of your skull to your Achilles tendon (especially the posterior) in four weeks. Do the kettle bell swing. To learn to do the swing properly, start with the kettle bell dead lift and progress to the touch and go dead lift and thereafter you need to do only the swing.

If your age and fitness make it difficult to do the exercises as recommended. Begin by walking and build up to 15 mins in the mornings and 15 mins in the evenings or 30 mins all at one time (easy jogging is more effective than walking). Then if you can, start doing the exercises given below and slowly build up to the recommended repetitions or to such level as to leave you feeling comfortably stretched.

1. The Kettle bell swing – for those just starting, it is advised to allow your body to grow into this exercise in stages.

- a) First stage - The Kettle bell Dead lift: (3 sets of 5 reps)

Execution :- Stand with your feet 6" to 12" wider than your shoulders, with feet pointing 30° out and place the kettle bell directly between your feet in line with your insteps. Bend down in a "sitting in chair" movement and do a two-handed dead lift (head-up, eyes straight ahead), slowly and return to the start position for the next rep.

It is critical that you touch the same spot on the ground every time. Lower yourself hinging at the hip and sitting back, instead of squatting down till thighs are parallel to the ground. Keep any bending at the ankle to a minimum or not at all. Keep shoulders somewhat pulled back to avoid rounding your back and do not let them get ahead of your knees at any time.

Once you can comfortably do this, then replace this exercise with the second stage.

- b) Second stage - Touch & Go Dead Lifts: (Again 3 sets of 5 reps)

Execution:- Repeat the same two-handed dead lift as in exercise 1, but with the touch point a little further back, between and behind the heels of your feet. You must return the kettle bell to exactly this spot every time. Lift the kettle in a quick 'touch go' explosive fashion as soon it touches the ground. However in this exercise as you come up, pop your hips forward, the angled rise of the kettle bell will give it a pendulum like swing up to about hip level.

Once you can comfortably do this, then replace this exercise with the final stage.

c) Final stage - The Kettle bell swing -

Start with 3 sets of 10 with the weight that allows you to do 20 perfect repetitions but not more than 30 i.e. start with say 5-10 kgs for women and 10-20 kgs for men and grow the weight as necessary and increase reps and weight till you can do one continuous set of 75 swings or in multiple smaller sets with 60 seconds rest in between till you can do 75 continuous swings.

Execution:- Place the Kettle bell between your feet in line with insteps as in the first dead lift exercise.

Pick the kettle bell Two-handed up off the floor, start a small swings by first "sitting back" a little with the hips and then popping forward to swing the kettle up to about shoulder height as you straighten up. Imagine pinching a coin between your buttocks as tight as you can, as you forcefully pop your hips forward. Make the movement larger while maintaining your balance. On the down swing, let the kettle swing between your thighs till it is tucked up right under and behind the buttocks, with your knees slightly bent but always with head up and eyes looking front and with the back straight. Then repeat the swings.

2. Myotatic crunch for Abs:

Execution: -The myotatic crunch (An improvement on the usual floor crunch - this exercise leverages the fully stretched position and the resultant myotatic or stretch reflex for a stronger contractions. Lie down face up with your back on a BOSU ball or a Swiss ball, your knees are bent with feet flat on the floor and your bottom close to the floor (no more than 6 in off the ground)). Then follow these steps:

- i. Start with arms stretched overhead as high as possible palms overlapped as if diving, and behind or next your ears for the entire exercise.
- ii. Lower under control while attempting to extend your hands further away from the ball.
- iii. Pause at the bottom for 2 secs, aiming for maximum elongation.
- iv. Rise under control and pause in the upper fully contracted position for 2 secs. The arms should still be next to your ears and not go beyond the perpendicular to the ground.
- v. Repeat for a total of 10 reps. Once you can do 10 easily, you may add weights to your hands. For women weights are not recommended, as you don't want square oblique's.

3. Transverse Abs exercise: To also pull your abdomen in you need to work on the 'corset muscle', the one that aches as you laugh or cough.

Execution:

- i. Go down on all fours (knees and palms) and keep your gaze focused either directly under your head or slightly in front of you. Don't arch your back or strain your neck.
- ii. Forcefully exhale from your mouth till all air is fully expelled. It is essential that your abs be maximally contracted from this forceful exhalation. Pull your belly button upwards toward your spine for a target of 8 to 12 secs.
- iii. Relax and inhale fully through nose after the hold.

Take one breath cycle of rest (exhale slowly out of the mouth, inhale slowly through the nose), then repeat for a total of 10 reps.

4. Hip Flexor Stretch Exercise: Fixes 'pot belly'. 1 set of 1 rep to each side.

- i. Stand with hands on your hip facing straight. Lunge one foot forward and go down till you are resting on the knee of the back leg and the foot of the front leg with front thigh parallel to the ground. Straighten the hand opposite the front leg upwards with other hand still on hip. Turn hip and shoulders and face to the opposite side (towards raised hand) and hold for 30 secs before returning to initial position.
- ii. Repeat with opposite side leg and arm

5. Additional exercises, that also helps to improve the Hour Glass Shape for women.

a) Plank exercise

Execution: - Front Plank - lie face down, lift your body up keeping it stiff and straight as a plank, till you are resting on your toes and on your elbows. Hold for 30 secs. Then rotate your body up straight as a plank till you are resting on the side of one foot and your elbow and fore arm under your shoulder. Hold for 30 secs to 90 secs. Repeat on the other side. One set per workout is all that is needed.

b) Two-legged glute actuation raises from the floor - one set of 20 reps. On exercise days preferably before kettle bell swings.

Execution:- Lie down on the floor face up with your legs bent and heels as close to your buttocks as comfortable, and arms straight palms down close to the body. Drive your hips up till the body is resting only on your shoulders and heels, pull the toes up. Return to start position and repeat.

c) Flying dogs - 1 set each side X 15 reps.

Execution: Rest your body on your palms and knees, with the hands and back straight. Now raise right arm straight with fingers pointing to front and left leg extended straight back. Then alternate with left arm and right leg.

Schedule for exercising:

Exercise only at least 60 to 90 mins after any meal. (Ideally 60 mins after Breakfast or Tea or 90 mins after a heavy meal as suits your schedule)

1. Exercise days: say, Monday - Wednesday and Friday
 - a) Two-legged glute actuation raises from the floor one set 20 reps.
 - b) Kettle bell swings to at least 75 reps.
 - c) Slow myotatic crunch with maximum weight X 10-15 slow reps.
 - d) Every other week - a single arm kettle bell swings up to a minimum of 25 reps each side
 - e) Flying dogs - 1 set each side X 15 reps.
 - f) Transverse Abs exercise - total of 10 reps.
 - g) Hip Flexor Stretch Exercise - 1 rep to each side.
 - h) Plank exercise - one set of one rep on each side for 30 secs.

Note: See www.fourhourbody.com/exercises, for photos of these exercises.

2. Other days are rest days. Walking after a meal on these days and some breathing and balance exercises should be enough.

Even if you exercise only two days a week doing only the a), b) and c) exercises as above, the effect is adequate for weight loss. But for a better effect and shape it is advisable to exercise three days a week and do all the exercises a). to h) as above. You may also decide to do 'Surya Namaskars' (5 to 20 reps counting one leg only) and 'Kapalbhati' & 'Pranayama' breathing exercises as you deem fit and some Yoga Asanas or Tai Chi for balance on the non-exercise days.

If you have to select only one exercise then stick with the Kettle bell swing. This exercise not only improves your body profile, but also improves your posture and removes the flab on the arms. On non exercise days at least do 'Kapal Bhatti', especially for those over 60 years age, as it helps strengthen the diaphragm muscles that are needed to help you to cough strongly and to clear your lungs.

Common Mistakes and Misunderstandings

“A gram of prevention is worth a ‘lulogram’ of cure, and a few minutes of education are worth many kilograms of extra fat loss” - *Timothy Ferriss*.

Mistake No#1 – Timing

Not eating within ONE HOUR of waking, preferably within 30 MINUTES.

Even if you do not have an appetite in the morning, eat a small protein rich meal (30gms) say. 2 to 3 hard boiled eggs sprinkled with sea salt. A ready to drink cold protein shake with ice and water with about 30 gms protein is a good substitute. (Check the other ingredients). Eat more if you need to an hour or two later. You may also prepare the breakfast meal the night before and microwave it and eat in the morning.

If you skip breakfast or forget to eat within one hour of waking, --- you will FAIL.

Mistake No#2 - Not eating enough protein. You should eat 0.8 to 2.5 gms of protein per kg of body weight depending on your activity level.

Total daily protein intake is more important than per meal protein, but it may be more convenient to include it in all meals.

It is important to remember that food weight does not equal protein weight. A lean, near fat-free, chicken piece would actually contain less than one third its weight as protein. Most of the rest of the weight is only water.

Get at least 30 gms of protein per meal.

This is absolutely critical at breakfast. Eating at least 40% of your breakfast calories as protein will decrease carb impulses and promote a negative fat balance. Even 20% protein - more than most people otherwise consume - doesn't cut it.

The first few days you may feel as if you're force-feeding yourself, and then it will all change and you'll feel incredible. Get at least 30 gms for breakfast and atleast 20 gms per other meals, no matter what.

Related Problem: Not eating enough food. DO NOT try to restrict portions or calories. Eat till you are full, and eat as much as you like of the approved foods. If you don't, you will either down shift your metabolism or cheat between meals with banned food snacks. Eating less can also make you irritable.

Mistake No#3. - Not drinking enough water

To ensure optimal liver function for fat loss, increased hydration is a must. Not drinking enough water is more common among women.

Make a special effort to drink more water on your feast / binge day, as the carbohydrate in the food will pull water to your digestive tract and muscle glycogen. Insufficient water results in headaches.

Mistake No#4. - Over eating snacks / nuts etc. There are certain foods that, while technically fine to eat on the diet, are prone to portion abuse. Eating one portion leads to over snacking.

A few almonds or walnuts (5-10) is fine, but no one eats only that few. Self discipline is over rated and undependable. Don't eat anything that requires portion limitations. Keep such items out of reach, even out of home.

Mistake No#5: - Over consuming Artificial (or All-natural) sweeteners (See understanding Artificial and 'Natural' sweeteners)

Even with no calories, most artificial and natural sugar substitutes provoke increased insulin release. Surprisingly 'Aspartame' shows little effect on insulin, but it is often paired with acesulfame-k, which has a host of negative effects. Both low-calorie and no-calorie sweeteners are associated with weight gain and are likely to stall your fat loss.

"All-natural" sweeteners are based on the role of fructose, having arguably worse effects in metabolic disorders, than even high-fructose corn syrup, (HFCS). So called "sugar-free" health foods are full of sweeteners such as 'concentrated apple and pear juices', which are two-thirds fructose. Even the latest of such sweeteners have negative effects. Raw agave nectar is as high as 90% fructose and shows no better anti oxidant content than refined sugar or HFCS.

Skip the sweeteners whenever possible.

Stevia is a better alternative as it is a plant product in use for hundreds of years without adverse effects.

You may use Stevia or experiment instead with spices and extracts like cinnamon and vanilla.

Mistake No#6: - Hitting the Gym too often.

Do not try unsustainable over training as it results in 'reward' eating and may actually cause you muscle loss and lower your basal metabolic rate and thus stall your fat-loss. Remember track body fat percentage or total inches and not just weight.

Doing too much will not only NOT help, it will reverse your progress, as it also leads to over eating, consuming sports drinks and other assorted self-sabotage actions. Remember - MED. Less is more (see "Understanding exercise").

Dealing with Plateauing of weight loss:

You will lose more weight in the first few weeks and less in each week thereafter and plateau after a few months. To lose the final 2 to 5 kgs that seem resistant to everything else, try any of the following options, while keeping the protein content more than 115 gms for lean muscle mass of 50 kg and above, with an additional 30 gms for every 4.5 kg above 95 kg.

For sizing; 75 gms of almonds is about 60 almonds, and 225 gms of lean protein is approximately the size of your fist. If you weigh less than 68 kg use the lower end of the protein intake (115 gms) and have smaller portions for the add-ons - 37 to 38 gms of nuts.

The essential rule is to eat one of these meals every three hours while awake and within one hour of waking and one hour before bed-time. Skipping meals is not permitted. The clock is your drill sergeant.

Meal options: Simple and Effective

Option 1: (for vegetarians)

50 gms of whey protein isolate+75 gms of nuts or two table spoons of peanut butter.

Option 2:

225 gms of cooked, white, non-fatty fish + 75 gms of nuts or two table spoons of peanut butter.

Option 3:

225 gms of cooked chicken+75 gms of nuts or two table spoons of peanut butter.

Option 4:

225 gms of cooked fattier protein (red meat or fatty fish or dark poultry) + one table spoon of olive or macadamia oil.

Option 5:

5 whole eggs (easiest if hard boiled) one table spoon Ghee can be substituted for two of peanut butter.

Unlimited quantities of the following are allowed at each meal.

Spinach, Brussel sprouts, Kale, Collard greens, Broccoli rabe, Asparagus, Broccoli and other cruciferous vegetables.

No sweet corn, beans, tomatoes or carrots are permitted.

One table spoon of olive oil or macadamia nut oil can be included as dressing as long as you have not included the 75 gms of nut and two table spoons of peanut butter in that meal.

One cheat meal is encouraged every 7 days.

Worrying that this diet is too strict for you to follow? Just start with changing your breakfast. You will lose noticeable fat in 4 to 6 weeks. Then you should be motivated to 100% for 5 days and to fast on the 6th and then indulge yourself on the 7th day. But really is it too difficult to do 100% from the start day for at least one week?

Understanding Cholesterol and Salt intake

Cholesterol:

Cholesterol is an essential material for our body. Over 85% of the cholesterol in our body is created by our liver. The rest comes from our diet (meat, eggs and dairy products). However, excess of cholesterol in our body is still a cause for concern. To reduce the absorption of from dietary cholesterol, we need to add Phytosterols, a vegetarian substance with similar structure to Cholesterol, to our diet. Phytosterols compete with Cholesterol and hence reduce the amount of Cholesterol absorbed by the body.

The best sources for Phytosterols, which are compatible with the slow carb diet, are foods such as sesame oil, nuts and seeds (peanuts, almonds and cashew), cauliflower, onions, legumes, peas and beans.

There is no appreciable relationship between dietary intake of cholesterol and heart disease. The real source of damage of seems to be from excess consumption of sugar and of carbohydrates (especially refined carbohydrates) and of trans-fats (mainly hydrogenated vegetable oils).

Salt intake:

Currently the US Government advises that salt consumption be limited to no more than about a tea spoon full (2300 mg sodium) over 24 hours, reducing this further by a third for those over 50 years. Other governments follow suit and advise that salt is the 'Villain' that contributes to serious and often fatal heart conditions and obesity. Hence the many 'Lo-salt' and 'Low-sodium' products.

However a 2014 at McMaster University in Canada has found that "there is no longer any valid basis for the current salt guidelines".

Historically it was noted that in certain few people, blood pressure can be lowered by simply restricting their salt intake, and since high blood pressure is often linked to cardiac disease, it follows that salt (sodium) restriction will be good for your heart. But how much lower can salt restriction take your blood pressure to? According to the American Heart Association, an average person who reduces his/her salt (sodium) intake from the current median 3500 mg/day to the recommended tea spoon full a day (2/3rds) may see a drop in blood pressure from 120/80 to only about 118/79, a difference that for most people would be within the reading error.

Scientists are now arguing that though excess salt is still to be avoided, a bit more is okay. The average healthy person can have up to 6000 mg of sodium (versus the 2300 mg earlier recommended) per day without endangering to their health. Some even argue that if you are consuming less than 3000 mg/day you are actually putting yourself at unnecessary risk.

Hence, do not worry too much about Cholesterol and Salt intake but as a matter of abundant caution do eat a lot of Phytosterols along with meat and eggs and consult your Physician.

Understanding Gut Micro Flora

Why is obesity much more common today than it was even a few decades ago?

Researchers are starting to find bacterial clues that may point to an answer. There has been a profound shift in the populations of the over 30,000 species of bacteria that live in our digestive tracts, and studies show the changes as correlated with increased obesity. Your gut is an active eco system and is your largest interface with the environment.

There are 10 times more bacterial cells (100 trillion) in our body than human cells (10 trillion). For the most part these bacteria help us, improving our immune system, providing vitamins, and preventing other harmful bacteria from infecting us. They also regulate how well we harvest energy from our food. Antibiotics can disrupt such Gut Micro Flora and hence must be taken with care. They work by releasing metabolites and waste molecules that act not only on your Digestive System but also on your Nervous System. They also alter receptors that respond to taste, mood, pleasure and pain and thus have considerable effect on your very diet preferences and even your feelings and behaviour.

So far, two primary strains of intestinal bacteria have been found to influence fat absorption, almost regardless of diet. Bacteroides and Firmicutes. Lean people have more of the former and are therefore encouraged to have more fatty foods. Obese people have more of the latter which thrive on carbohydrates and release chemicals that enhance the craving for starchy foods. As obese people lose weight, the ratio of bacteria in their gut swings confidently over to more Bacteroides.

Pending further studies on the effectiveness of each strain of these bacteria on each other and on us and to understand how they affect our health and behaviour and how we might modify them to help us more, there are a few things you can now do to cultivate healthy and fat-reducing gut flora.

1. Get off Splenda and most other fake sugars

Studies have shown that these affect the good bacteria and hence are nearly as bad as the sugar they are the substitute for. Stevia may be the only sweetener that may be used.

2. Go fermented:

Fermented foods contain high levels of healthy bacteria and should be viewed as mandatory. Cheese, Kimchee, Sauerkraut, unsweetened plain yogurt etc. For the first month of your diet stick with Kimchee and Sauerkraut. Consume 5 forkfuls of either every morning before breakfast and add Kimchee to almost all meals. Fermented foods also help maintain Vitamin K-2 levels.

3. Consider prebiotics (eg: iflora) and probiotics (eg: organic insulin, fructooligosaccharide – FOS, Yakult) and in whole foods - garlic, leeks and chicory.

Such pre- and probiotics also have beneficial effects on allergies, obesity and a range of diseases from AIDS to type 2 Diabetes, chronic fatigue syndrome, anxiety symptoms and depression.

When the body needs food, rising levels of the hormone ghrelin, produced in the upper stomach and pancreas, signal the brain and trigger a desire to eat. At the end of a meal, specialized endocrine cells in the wall of the small intestine release other hormones (like cholesterol, glycogen-like peptide-1, and

oxyntomodulin) that signal satisfaction. In obese people these signaling networks malfunction, leaving them perpetually hungry.

There are over 200 hormones released by the various bacteria in the GI tract. All of these hormones are acting to control your metabolism and your eating behaviour. Ghrelin drives the urge to eat. Stretch receptors in the stomach signal when to stop and a whole lot of hormones released in each of the three regions of the small intestine act on your food digestion and absorption. In the first few inches of the small intestine, the duodenum which connects directly to the stomach, the partially digested food is blended with bile from the liver, helping in the digestion of fat. Then the 8-foot long midsection, the jejunum, where vital sugars, amino acids, vitamins and small proteins are dissolved and finally the ileum, which secretes incretins and absorbs more nutrients before emptying into the large intestine for elimination

Understanding Surgical cures for Fat loss and Type-2 Diabetes:

Fat cells are almost all created in the body by the age of two years. These cells have the ability to expand like balloons to hold more fat. Evidently the obese have not only more of such cells but also more of them storing more fat. Hence the logic for ultra sonic or cryogenic lipolysis which reduces the number of fat cells and thus the fat stored. But these procedures are new and the process of elimination of the fat after bursting the fat cell is to be better understood. You may resort to such treatment for stubborn fat deposits, but do so in small stages and after due physicians advice. Surgical liposuction should these days be a last resort option and only when so advised by your Physician.

Researches using data from the National Health and Nutrition Examination Survey published in 'The Lancet - Diabetes & Endocrinology, have noted that it is the fat cells pigment epitheliums derived factor that makes muscle and liver ignore insulin, triggering a chain of events and interactions that lead to the development of Type-2 diabetes. Hence the more fat cells a person has, the less sensitive they become to insulin, which then calls for a greater amount for insulin to maintain the body's regulation of blood-glucose, thus making it difficult for the obese to control diabetes. Of course other studies have questioned BMI being used as a definer. Hence the question remains how obese is obese?

Type-2 Diabetes is thought to be caused by high levels of obesity and insulin resistance which is itself linked to greater susceptibility due to the ever increasing consumption of sugar and refined carbohydrates in our diet. Fructose the main sugar in fruits, is chemically similar to glucose and carries similar number of calories, but the two are processed differently by the body. Fructose also tastes sweeter and seems to make people hungrier. Cells in the body regulate the amount of glucose they use to make energy, while fructose is generally metabolized in the liver. Fructose does not drive the body to produce insulin, a hormone that plays an important role in curbing appetite and making food less appealing. Increased consumption of Fructose is considered to be a major contributor to the prevalent obesity and diabetic epidemic.

Type-2 Diabetes is a worldwide epidemic with many contradictory findings about its real causes and effects. However all agree that it is a serious problem that becomes more serious with obesity. It is difficult to achieve smooth normal blood sugar level readings with just conventional treatments, comprising of eating less, exercising more and taking oral medication and insulin, as these do not effect what research is increasingly showing to be the main cause – the intestinal hormones released by our Gut micro-flora, that have a striking effect on the pancreas and on insulin secretion.

Research seems to suggest that malfunctions in the duodenum, the first part of the small intestine, causes Type-2 diabetes.

The International Diabetes Foundation has endorsed bariatric (Gastric Bypass Roux-en-Y) surgery as a treatment for type-2 diabetes, citing studies indicating that it triggers remission in about 85% of the patients. Bariatric surgery (as noted by *Dr Walter Pories*, chief of surgery at East Carolina University's, Brody School of Medicine, USA) proved to be a long term solution for 4 out of 5 diabetic patients. It also has beneficial effects on high BP & Cholesterol. Obesity is now recognized as a disease and not just a behavioral problem.

Studies on the after effects of Gastric By-pass surgery have shown that the weight loss and beneficial effect of it on type 2 diabetes may be due more to the effect of the changes in micro-flora in the gut and certain hormones and amino acids released by the microbes than due to the surgery. Simply re-plumbing the GI tract reprogrammes the body's hormones and re-sets its metabolism.

Bariatric and Gastric By-pass surgery resulted in unexpected benefit of controlling diabetes for many patients. *Dr. Aureo de Paula* in Brazil pioneered a laparoscopic operation that proved very helpful in controlling diabetes and avoiding future diabetic complications. A long segment of ileum (ending portion of the small intestine) is shifted to the upper small intestine area, where food particles first reach after the meal, causing an immediate secretion of a hormone (GLP's), which acts on the B-cells of the pancreas to promptly secrete insulin to control the blood sugar. This clearly shows that weight loss is not the sole way for control of diabetes. He and other surgeons across the world (including *Dr. Surendra Ugale* in Hyderabad and *Dr. Abhay Agarwal* in Mumbai) now carrying out this procedure have observed excellent results with about 95 percent remission of Type-2 Diabetes. Improvements are also seen in the patients triglycerides, cholesterol, kidney function and leg pain. The only life-style change required thereafter is that the patient needs to consume smaller portions of food at a time, but can do so more often (4 to 6 times a day).

Ileal transposition is an ideal surgical treatment of diabetes in non morbidly obese patients. In addition, for really obese diabetic patients, Bariatric surgery (reducing the pouch of the stomach) may be required. Laparoscopic Sleeve Gastrectomy (LSG), a restrictive bariatric operation in which an impermeable silicon sleeve fitted into the lower part of the stomach, fencing off the duodenum, seems to mimic the effects of gastric bypass surgery, prompting weight loss and control of Type-2 diabetes in obese patients. Diabetes is resolved in almost all Diabetic patients and hypertension is resolved in about 93 percent and improved in the rest of the patients.

However, any surgery is to be resorted to only as a last option with proper advice from your Physician. The Slow Carb diet recommended herein, effects your Gut micro-flora and hence, if followed strictly, should gain you much of the same benefits as the surgery.

Understanding the supplements:

1. Policosanol - is an extract of plant waxes, often sugarcane. Addition of Policosanol (20-25 mg just before bed) results in good fat loss effects. Higher doses have little additional benefits. It helps in lowering total cholesterol and improving HDL. Recommended dosage - 25 mg on waking and again prior to bed time.
2. Alpha - Lipoic Acid (ALA) - is a potent anti-oxidant and free radical scavenger that has been proven to regenerate vitamins C & E; restore levels of intra-cellular glutathione, an important anti oxidant that declines with age; increase excretion of toxic heavy metals such as mercury and improve liver condition. Helps absorb nutrients and also inhibits triglycerides and therefore fat storage.

ALA - helps store the excess carbohydrates in muscle or in your liver as opposed to in fat.

It has no observable adverse effects even at 60 mg/kg of body weight.

Recommended dosage - 100 to 300 mg with each meal and not exceeding 900 mg total per day. Reduce dosage if experiencing acid reflux syndrome.

3. Green Tea Flavonoids (EGCG): It protects against UV - induced skin damage and has anti-ageing properties. Also increases GLUT - 4 recruitment to the surface of skeletal muscle cells, while inhibiting glucose recruitment in fat cells i.e. it inhibits the storage of excess carbohydrates as body fat and preferentially diverts them to muscle cells.

EGCG also appears to increase programmed cell death (apoptosis) in mature fat cells. The ease with which people regain fat is due to a certain 'fat memory' (the size of the fat cells decrease but not the number), which makes EGCG a fascinating candidate for preventing the rebounding most dieters experience.

Dosage - 325 mgs - 3 to 4 times per day (decaffeinated green tea extract pills)

If undergoing cancer treatments please consult your doctor or avoid EGCG.

4. Garlic extract and its constituent parts have been used for cholesterol management and even for management of lethal MRSA staph infections.

Allicin: If delivered in a stable form, appears to inhibit fat regain.

Recommend using an aged garlic extract (AGE) with high allicin potential that includes all constituent parts, including S-Allyl cysteine. Use extracts for convenience.

Dosage - daily 200 mg can go up to 650 mg.

Garlic in cooking can act as an additional supplement. Fresh garlic cloves in the quantities needed to be effective can cause problems in the digestive tract.

5. The Ayurvedic medicinal plant extract 'Cissus Quadrangularis' (CQ) usually prescribed for joint repair when used in combination with PAGG, show a synergistic anti-obesity and anabolic (muscle growth) effects. Pending further research *Ferriss* suggests not exceeding 7.2 gms per day (2.4 gms X3 taken 30 minutes prior to meals) for a maximum of 6 to 8 weeks. CQ may be available combined with Omega-3 in cod liver oil capsules.

Understanding Fat, Exercise and the cold effect:

As mentioned earlier, calories consumed and calories used up in exercise is not the entire answer to losing unwanted fat.

Ray Cronies, a NASA scientist, had researched that even if he ran a 42 km+ full marathon, he would only burn around 2600 calories burning approximately 340 gms of fat. So when he learnt that *Michael Phelps*, the Olympic swimmer, ate 12,000 calories a day, he analyzed that - "In order for *Phelps* to burn those kind of calories above and beyond what his resting metabolic rate (RMR) was, and knowing that competitive swimming consumes only about 860 calories an hour, he would have to sustain more than 10 hours of continuous butterfly every day. Not even *Phelps* can do that".

The answer was in understanding the thermal load of water (24 times more thermally conductive than air). Spending 3 or 4 hours a day in water helps *Phelps* lose more calories as heat. Also the effect of BAT (see below)

While calculating calories, it is not only calories consumed by exercise and storage that count. The human body is an open thermodynamic system and has other options to be considered - exercise / work, heat or matter (excretion). Being in a pool of water at 27°C for four hours could burn up an extra 4000 calories as thermal load.

Even 2 hours of cold exposure (in 10°C water) can burn up almost four times more fat than usual, but it is not only this that counts. If you encourage muscle gain, Adiponectin a hormone secreted by fat cells, may cause both increase in the oxidation (burning) of fatty acids in mitochondria and increase uptake of glucose by muscle cells.

Not all fat is equal. White Adipose Tissue (WAT) and Brown Adipose Tissue (BAT) are different. BAT is not oxidized WAT.

WAT is what we usually think of as Fat - an adipocyte - composed of a single large fat droplet with a single nucleus. BAT, in contrast, appears to be derived from the same stem cells as muscle tissue. A BAT cell is composed of multiple droplets that are brown in color because of a much higher volume of iron - containing mitochondria. Mitochondria produce ATP and also oxidize fat in muscle tissue. BAT helps dissipate excess calories as heat. Calories that would otherwise end up stored as WAT. BAT effects metabolism.

Cold helps in increasing the amount of BAT and also stimulates BAT to burn fat and glucose as heat. In other words cold might help you increase the amount of BAT or 'fat burning' fat.

BAT is particularly present in the neck and upper chest areas. Therefore using an ice-pack on neck and upper trapezius area for about 20-30 minutes, generally in the evening, when insulin sensitivity is lower than in the morning, adds to heat loss and leads to losing fat. Do it 5 days a week (Mon - Fri), or consume two glasses of ice water on an empty stomach immediately on waking. This increases your metabolic rate, peaking at 40-60 minutes post consumption. Eat breakfast 20-30 minutes later - or take 5-10 minutes cold shower after a couple of minutes of hot shower, before breakfast and before bed.

Cold exposure and the shivering it causes, increases adiponectin levels and glucose uptake by muscle tissue. This effect could persist long after the cold exposure ends. In India this would work only in really cold weather (around 10⁰c to 20⁰c) Cold water improves immunity which is enhanced by pre-heating with physical exercise or a warm shower.

In addition to the Basal Metabolic Rate, calories are consumed through:

Exercise - Heat loss through being in cold water / exposure to cold - Action of Adiponectin and BAT and in matter excreted.

Using the cold effect:

- Consuming 2 glasses of ice-water immediately on waking on an empty stomach will increase the resting metabolic rate by up to 24-30 % peaking at 40-60 mins post consumption. - or
- Take 5-10 mins cold showers before breakfast and/or before bed. Use hot water for 1-2 mins over entire body, then turn the shower to pure cold and focus the water on your lower neck and upper back for 1-3 mins. Then soap up and rinse your body fully as normal. If you are impatient and can tolerate more - take 20 mins baths that induce shivering.
Eat breakfast 20-30 mins later.
- Place an ice-pack on the back of the neck or upper trapezium area for 20-30 mins, preferably in the evening when insulin sensitivity is lowest. Place a towel on the sofa and lean back on it with the ice-pack on you as above as you watch TV or read.
- Short term exposure to cold (30 mins) leads to fatty acid release to provide fuel for heat production through shivering. Thus shivering could be sufficient to recruit GLUT-4 receptors to the surface of muscle cells, contributing to increased lean muscle gain.
- Even at shorter durations, cold exposure with shivering could increase adiponectin levels and glucose uptake by muscle tissue. This effect persists long after the cold exposure ends.
- In the absence of shivering, it is still possible to 'capitalize' on 'fat-burning fat' through the stimulation of BAT thermo generics. Under water exercises also help increase more lean muscle tissue than land-based exercises.
- Cold water improves immunity. Acute cold exposure has immune-stimulating effects and preheating with physical exercise or a warm shower can enhance this (Finnish Sauna & ice water plunge?). Increase in levels of circulating norepinephrine may account for this.

Not germane to fat loss, but cold showers are an effective treatment for depression. Shower at 20⁰C for 2-3 mins, preceded by a 5 min gradual adaptation to make the procedure less shocking.

Understanding why large amounts of fruit may not be healthy

Health researchers at the University of Southern California have discovered that the fructose that occurs naturally in fruit leaves people hungrier and hence more gluttonous than glucose, and is an important contributor to the growing prevalence of obesity. Of course glucose in excess is itself a cause of obesity.

Fructose is chemically similar to glucose but it tastes significantly sweeter and is processed differently by the body. While cells throughout the body regulate the amount of glucose they use to make energy, fructose is generally metabolized in the liver. It also does not drive the body to produce insulin, a hormone that plays an important role in curbing appetite. This is to be expected as fruit was not a major part of the diet of our ancestors and whatever fruit they found would generally have more seed and little pulp, while the fruit we consume today are bred to be the other way.

In vegetables and fruits, the fructose is mixed in with fiber, vitamins, minerals, enzymes, and beneficial phytonutrients, all of which help moderate the negative metabolic effects. However, if you suffer with any fructose-related health issues, such as insulin resistance, metabolic syndrome, heart disease, obesity or cancer, you would be wise to limit your total fructose consumption to 15 grams of fructose per day. This includes fructose from ALL sources, including whole fruit.

Your uric acid levels are a marker for your susceptibility to fructose damage. the higher the level the greater the susceptibility and the greater care you need to take when eating fruit. The ideal uric acid level is probably around 4 mg/dl for men and 3.5 mg/dl for women though upto 5.5 mg/dl appears safe.

If you are not insulin resistant, you may increase this to 25 grams of total fructose per day on average. If you received your fructose only from vegetables and fruits (where it originates) as most people did a century ago, you'd consume about 15 grams per day. Today the average is 73 grams per day which is nearly 500 percent higher a dose and our bodies simply can't tolerate this level of biochemical abuse. So please, carefully add fruits to your diet based on the following table to keep your total fructose below 15/25 grams per day, depending on your current health status.

Fruit	Serving Size	Grams of Fructose
Apple (composite)	1 medium	9.5
Apricots	100 gms	0.7
Apricots, dried	1 cup	16.4
Avocado	100 gms	2
Banana	1 medium	7.1
Blackberries	1 cup	3.5
Blueberries	1 cup	7.4
Cherries, sweet	10	3.8
Cranberries	1 cup	0.7
Dates (Deglet Noor style)	1 medium	2.6
Date (Medjool)	1 medium	7.7
Figs, dried	1 cup	23
Grapefruit, pink or red	1/2 medium	4.3
Grapes, seedless (green or red)	1 cup	12.4
Guava	100 gms	1.9
Honey	100 gms	42.4
Honeydew Melon	1/8 of medium	6.7

Fruit	Serving Size	Grams of Fructose
Jack Fruit	100 gms	1.4
Kiwifruit	1 medium	3.4
Lemons	1 medium	0.6
Limes	1 medium	0.2
Mango	1/2 medium	16.2
Orange (navel)	1 medium	6.1
Papaya	1/2 medium	6.3
Peach	1 medium	5.9
Pear	1 medium	11.8
Pineapple	1 slice (3.5" x .75")	4
Prune	1 medium	1.2
Raisins	1/4 cup	12.3
Raspberries	1 cup	3.0
Strawberries	1 cup	3.8
Tangerine/mandarin orange	1 medium	4.8
Watermelon	1/16 med. melon	11.3

Understanding the Effects of Sugar and Carbohydrates in our Diet:

Common sweeteners added to food include sucrose (white or brown sugar), fructose, glucose, high fructose corn syrup (HFCS), honey, brown rice syrup, molasses, jaggery, agave and evaporated cane juice.

It is not eating too much fat particularly saturated fat, that clogs the arteries and shortens life. It is table sugar. Table sugar is made up of equal parts of glucose and fructose. Glucose is metabolized by every cell in the body, whereas fructose-like alcohol-is primarily metabolized in the liver, where some of it is converted into fat through a process known as de-novo lipogenesis. Consume enough fructose and you could end-up not only increasing fat in the blood but also fattening your liver, just as you might by drinking too much alcohol.

Hence, consumed in large quantities, sugar is poison. Glucose is the body's main source of energy. Fructose isn't biologically necessary. Sugar primes the body to gain weight. Excess starches also have the same effect.

Within limits the natural fructose in fruits isn't thought to be a health concern because the fruit's fibre and cellular structure slows the rate at which it hits the liver. However, as the adage goes, sugar (which is mainly glucose) feeds cancer. Cancer cells find Fructose even more metabolisable than glucose and thus increasing their proliferation.

Carbohydrates convert to glucose which too can be dangerous in excess. The glucose from our food that doesn't end up being used for fuel or stored in the form of glycogen can also end up as liver fat.

This accumulation of liver fat appears to be the first step toward insulin resistance and increased insulin levels-leading to obesity and a cascade of other metabolic disorders that result in type 2 diabetes and heart diseases etc. the American Heart Association recommends a safe upper limit up sugar in excess of what is naturally present in lactose in dairy and fructose in fruit, both consumed in small quantities which is;

for children - 4 teaspoons/day - a 50z container of yoghurt with strawberries contains 3 teaspoons of sugar.

for women - 6 teaspoons/day -

for men - 9 teaspoons/day - this is typically what you will find in a 12 oz can of soda drinks. Crave a Cola? It also adds salt to make you thirstier.

Sugar contributes to premature ageing, just as cigarettes and UV rays. Sugar when present in the skin, forms cross-linking with amino acids that may have been damaged by free radicals. These cross links once formed can't unhitch and therefore jam the cells natural repair mechanism and result in prematurely old looking skin. Cinnamon, Cloves, Garlic and Ginger seem to slow down such cross linking.

See at You Tube - "Sugar: The Bitter Truth" by *Robert Lustig* endocrinologist and Professor of Pediatrics - University of California, San Francisco.

There is a strong link between the amount of sugar and carbohydrates in a Country's food habits and the prevalence of diabetes in that Country and with such changes in Indians diet those past decades, no wonder India has such high prevalence of Diabetes.

Understanding 'Artificial' and 'Natural' sweeteners in the diet

For avoiding sugars and common sweeteners, we are now offered a very wide range of 'Artificial' and also so called 'Natural' sweeteners, as opposed to the earlier chemical or artificial sweeteners. Sugar alcohols such as xylitol, sorbitol, mannitol, matitol, lacticol and isomalt. These aren't easily digested and have half or less of the calories in sugar. They are used in chewing gum and sweets as they taste better than most non-calorie sweeteners and some may actually help reduce tooth decay. However in excess they can cause bloating and diarrhea.

The other new sweeteners are:

- Sucralose: (eg: Splenda) - It is called a 'Natural' sugar, but it is actually a synthetic compound derived from altering the sugar molecule through a complex chemical process to allow it to pass undigested through the body and thus contribute zero calories.
- Sacharin: - In high doses it was earlier linked to bladder cancer but has since been exonerated for humans. Many also complain of its bitter after taste.
- Aspartame (eg: Equal):- Made from two amino acids (the naturally occurring building blocks of protein). It has been in wide use for over three decades. It is considered safe by FDA and WHO except for those who suffer from PKU, a rare genetic disease. But new questions have arisen about some of its long term and fructose related negative effects.
- Acesulfame: (Potassium) - Often combined with Aspartame. Has also been affirmed as safe by WHO and European Union. But questions remain about its effect on gut micro flora.
- Neotame:- Chemically related to the Aspartame, but much sweeter and can also be consumed by those suffering from PKU. However it is not yet available on the general market and the test of effects of long term usage are still awaited.
- Stevia Extracts: - perhaps the only real natural sweetener so far. Stevia comes from the shrub Stevia Rebaudiana. Its leaf powder can be used as a sweetener. Since Stevia has been extensively used as a sweetener in South/Central America for centuries it is considered most safe. The purified extract of Stevia Rebaudioside has also been recognized as safe by FDA.

Most sugar substitutes are very low or even zero in calories and most are also hundreds of times sweeter than table sugar and hence you need only tiny amounts. However the tendency is to use more of such sweeteners than really needed and also to use them more often as the sweeteners increase the craving for sugary foods. Research on all such 'Artificial' or 'Natural' sweeteners is still somewhat controversial (except for Stevia), even though many studies have found them reasonably safe. However these studies are not deemed, comprehensive enough to confirm no long term damage due to their increased usage, their insulin release effect and on their effects on gut micro flora and also their role in metabolic disorders due to their fructose content. Hence it is best to avoid all sweeteners whenever possible. If it is really sweet, it probably spikes insulin or screws up your metabolism.

Hence it is strongly recommended to 'get off' all such sweeteners Stevia could be the one exception as it is a direct plant product used for hundreds of years without adverse effects. You may also experiment with spices and extracts such as cinnamon and vanilla.

Cinnamon, even in small doses, has a substantial effect on glucose levels (up to 2.5% or more). At about 4 gms (one and a half teaspoons) per day it can lower not only the blood glucose but also LDL cholesterol and triglycerides. Cinnamon also makes you feel full faster because it slows the rate at which food exits the stomach.

DON'T use too much Cinnamon, as it has other active substances that can hurt you, eg: - Coumarone, a potent blood thinner. Use no more than 4 gms per day, as few dashes in your tea or coffee throughout the day.

Thoughts to ponder on:

Health researchers studying the records of more than 10,500 people in Hull in the UK, found that although over weight and obese patients have a higher risks of non lethal heart problems, those who are overweight had a lower risk of dying than patients with a 'Normal' BMI. Those who were under weight had the worst prognosis of all. So 'fitness' they suggest, is a better parameter for assessing health than just weight.

After all we all can see that a 'Bodybuilder' having the same weight and equal in height as an obese person may have the same BMI but is definitely far 'fitter'.

In around 2010, *Blandine Laferrere*, an endocrinologist at the New York Obesity & Nutrition Research Centre at St. Lakes and *Christopher Newgard*, a biochemist at Duke University Medical Centre, noted that blood levels of three essential branched-chain, amino acids (BCAAs)- leucine, isoleucine and valine found in foods like fish, eggs and legumes are, high in obese people and those with type-2 diabetes and that these levels drop after Gastric Bypass Surgery. This suggests a link between BCAAs and diabetes. Two other amino acids (tyrosine and phenylamine) can also be predictive of diabetes.

The question then is which is the real reason; or which is the cause and which the effect? Eating too many amino acids, or is it poor metabolizing of amino acids or is it the sugars and carbohydrates in our diet, that is responsible for the obesity and diabetes which then messes up our amino - metabolism. A possible life-style change might then be to switch to a low-protein diet eg: eating less of meat, nuts and lentils etc the main sources of BCAAs or follow the 'Slow Carb' Diet as recommended herein. Obviously we root for the 'Slow Carb Diet'. You decide for yourself after following the 'Slow Carb' Diet for at least 5 weeks, even if you are a vegetarian.

BIBLIOGRAPHY:

1. 4-Hour Body - by *Timothy Ferriss*
2. Good Calories Bad Calories and other books - by *Gary Taube*
3. The New Diet Revolution and other books - by *Dr. Richard Atkins*
4. Fat Chance - by *Prof. Robert Lustig*.
5. 'Health at Every Size; The Surprising Truth about Your Weight' - by *Linda Bacon*

SUMMARY OF PROGRAMME

SCHEDULE:- Remember to take your measurements and maintain your diary.

Take the additional supplements PAGG only if you deem necessary.

Note for Supplements:

Supplements are not compulsory, though are recommended for best results. However, please consult your Physician if on any medication or Pregnant or Breast feeding. Do not take these supplements if you are on Blood thinner medication or are Hypertensive, Diabetic or Hypoglycemic etc. Even if you don't take other supplements taking vitamins and minerals as recommended would be necessary. Get the tests done every quarter till you reach your desired level.

1. No supplements on Fast & Feast days
2. Take supplements for 5 days a week (say Monday to Friday) only for 8 weeks. Then take a break for one week. Then repeat. **This week off is critical.**
3. Creatinine monohydrate to be taken only on exercise days and **ONLY** for 4 weeks on waking and prior to bedtime.
4. L - Glutamate - 10 to 30 gms - take daily 80 gms per day for first 5 days. Take 10 gms every two hours on the dot till 80 gms is reached. Thereafter take 10 to 30 gms post workout only on exercise days.

On normal days (say Monday to Friday)

- a) On waking drink 2 glasses of cold water with added lemon juice.
- b) Take Policosanol – 20 to 25 mg.
- c) Take fermented cod liver oil (omega-3) 2 capsules along with one table spoon rich-yellow butter fat or Ghee
- d) Take 3 Brazil Nuts or 4-6 almonds (can be soaked overnight)
- e) Squeeze lemon juice into drinking water. Sprinkle food with lemon juice or lemon gratings (Grate whole frozen lemon)
- f) Take your Prebiotics and Probiotics dose.
- g) If exercising then for the **first 28 days ONLY** also take Creatinine Monohydrate - 3.5 gms as capsules or 5 to 6 gms as powder in solution on waking and again prior to bedtime.

Prior to Breakfast:

- a) Have Kimchee or sauerkraut (say 5 spoonfuls) and other such lacto-fermented foods before each meal.
- b) Take the supplements –vitamins and if deemed necessary AGG.
 - i. Vitamin B-complex

- ii. Vitamin D3 - 3000 to 5000 IU for 4 weeks only also have at least 20 mins exposure to sun light during the day, preferably in the mornings.
- iii. Alpha Lipoic Acid - 100 to 300 mg
- iv. Green Tea Flavanoids - 325 mg
- v. Garlic Extract - 200 mg

Have Breakfast within 30 mins or a maximum of ONE HOUR of waking. This is CRITICAL.

Breakfast - on normal days

Have a glass of cold water with 3 table spoons of fresh squeezed lemon juice before breakfast.

Breakfast - should be a light but High Protein (at least 30 gms) meal with legumes for insoluble fibre, say total of at least 300 to 500 calories.

Say-

1. 2 eggs with yolk - anti inflammatory, protects liver, increases basal metabolism & fat loss.
2. 160 to 250 gms spinach - same as above
3. Lentils - rich source of protein and effective in muscle repair and also improves glucose metabolism. Cook in ghee and add bacon, sausages, etc and tomatoes and cottage cheese (Paneer) for taste.
4. You may take a Whey Protein Isolate shake as a supplement.

If exercising, exercise only at least after 60 mins after a light meal and 90 mins after a heavy meal, then only on exercise days (Say Monday- Wednesday - Friday) also take post workout:

If deemed necessary take - L - Glutamate - 10 to 30 gms - take daily 80 gms per day for first 5 days. Take 10 gms every two hours on the dot till 80 gms is reached. Thereafter take 10 to 30 gms post workout only on exercise days.

Tiffin: on normal days - some nuts or dal fried, carrot and cucumbers slices/sticks etc.

Prior to Lunch - on normal days (say 30 min earlier)

- a) Have Kimchee or sauerkraut (say 5 spoonfuls) and other such lacto-fermented foods before each meal.
- b) Squeeze lemon juice into drinking water. Sprinkle food with lemon juice or lemon gratings (Grate whole frozen lemon)
- c) If deemed necessary - Take the supplements (AGG)
 - i. Alpha Lipoic Acid - 100 to 300 mg
 - ii. Green Tea Flavanoids - 325 mg
 - iii. Garlic Extract - 200 mg.

Lunch: - on normal days - Just before lunch:

- a) Consume a glass of cold water with 3 table spoons fresh squeezed lemon juice.
- b) Have Kimchee or sauerkraut (say 5 spoonfuls) and other such lacto-fermented foods before each meal.
- c) Squeeze lemon juice into drinking water. Sprinkle food with lemon juice or lemon gratings (Grate whole frozen lemon)

Lunch as per your diet schedule

Tea Time

- Green Tea with light snacks. Lentils/Dals, Vegetables, onion pakoras, Dahi vadas etc

Prior to Dinner: on normal days (say 30 mins earlier)

- a) If deemed necessary - Take the supplements (AGG)
 - i. Alpha Lipoic Acid - 100 to 300 mg
 - ii. Green Tea Flavanoids - 325 mg
 - iii. Garlic Extract - 200 mg

Dinner: - on normal days - Just before Dinner:

- a) Consume a glass of cold water with 3 table spoons fresh squeezed lemon juice.
- b) Have Kimchee or sauerkraut (say 5 spoonfuls) and other such lacto-fermented foods before each meal.
- c) Squeeze lemon juice into drinking water. Sprinkle food with lemon juice or lemon gratings (Grate whole frozen lemon)

Dinner as per your diet schedule

Prior to Bed Time: Should be at least 1 hour after Dinner

Again if deemed necessary Take the supplements - (PAG)

- i. Policosanol 20-25 mg
- ii. Alpha Lipoic Acid - 100 to 300 mg
- iii. Garlic extract - 200 mg
- iv. Fermented cod liver oil (omega 3) - 2 capsules with yellow butter fat or ghee
- v. If exercising, then also take for the first 28 days ONLY - Creatinine Monohydrate - 3.5 gms as capsules or 5 to 6 gms as powder in solution on waking and again prior to bedtime only on exercise days (say Monday- Wednesday - Friday).

On Fast Days - (say Saturday)

Fasting from after dinner on the previous day (say Friday) to dinner time on the next day (say Saturday) should be enough.

Have only cold water with lemon juice or butter milk till Dinner. Dinner can be as on other days.

Remember No supplements on Fast Days.

On Feast Day - (say Sunday. Again you need have no supplements on Feast day)

Breakfast: You may have the same light protein rich breakfast as on normal days. If however you decide to have a carbohydrate rich breakfast on this day then 30 mins prior to breakfast take a tea spoon of cinnamon powder with honey.

Prior to Lunch:

30 mins prior to lunch (1st Binge Meal) - consume a small quantity of Fructose - 1 whole fruit. If you are a coffee drinker then have grape-fruit

Just prior to lunch:

Do 60 to 120 secs of air squats, wall presses and cable extensions.

Do as many repetitions of each as you can comfortably do (up to a maximum of 30 to 50)

If even this is difficult try walking for a few minutes and do some isometric contractions especially leg muscles.

Tiffin: as you desire

Lunch: as you desire. Use spices. Also add cinnamon to your pastry or dessert.

Post Lunch:

- Eat some Dark chocolate

Again after 90 mins - do 60-90 secs of light exercise (air squats, wall presses, chest extensions) or walk for a few minutes.

Tea Time: as you desire

Dinner: as per lunch. At least one hour before Bed-time.

Now get started on this Programme and see your Body improve!

P.S.:- IDEAz would be happy to receive your contribution to the institute as you deem appropriate to encourage its work. In this case perhaps Rs. 1000/- per every inch loss in your total measurements after three months could be a fair guide.

With Best Wishes from
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