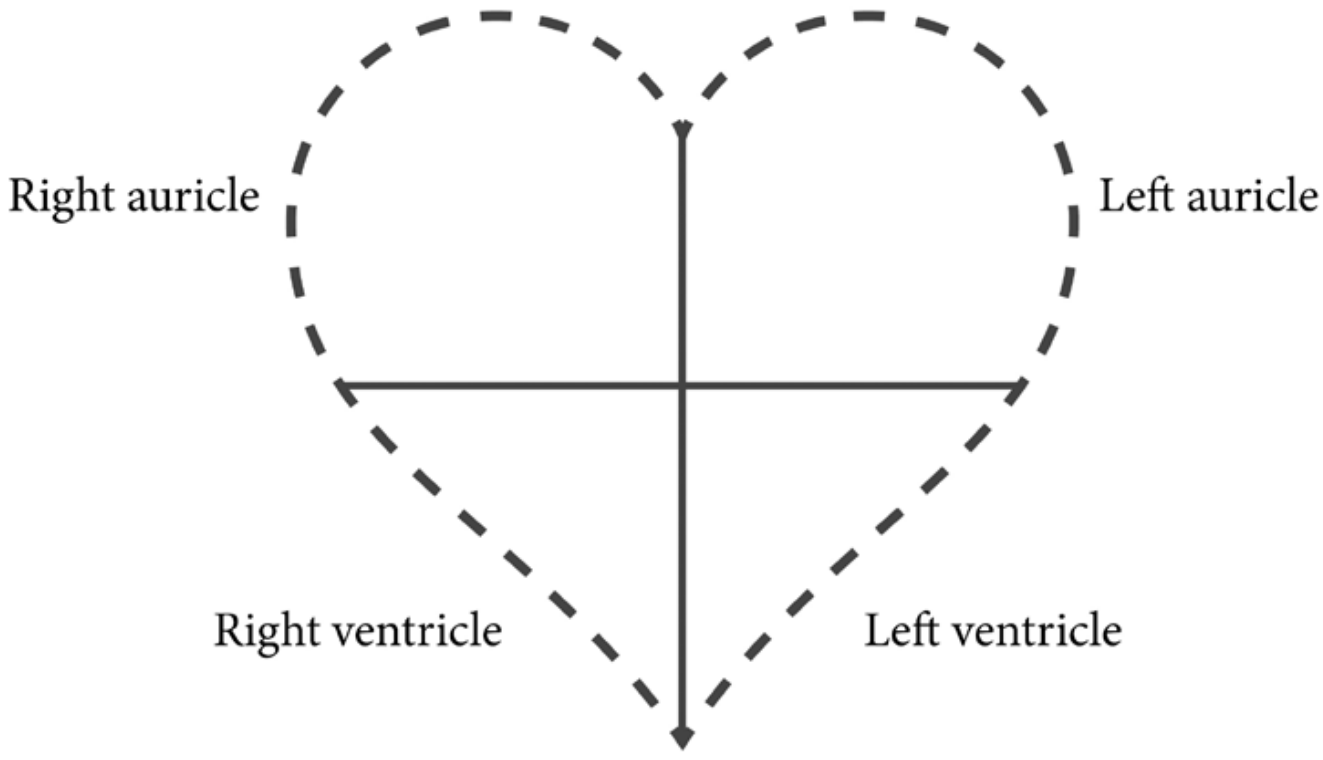
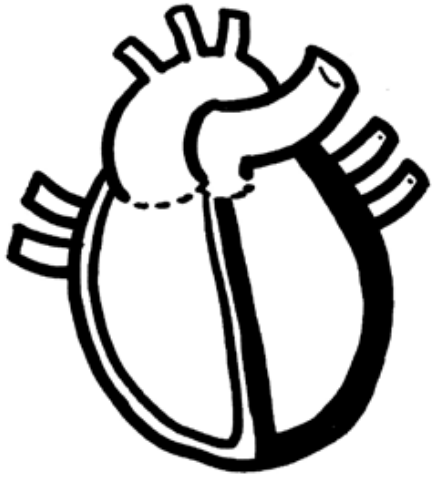
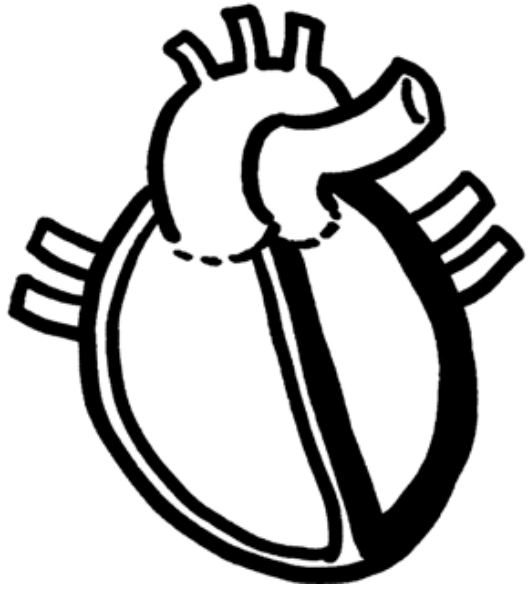
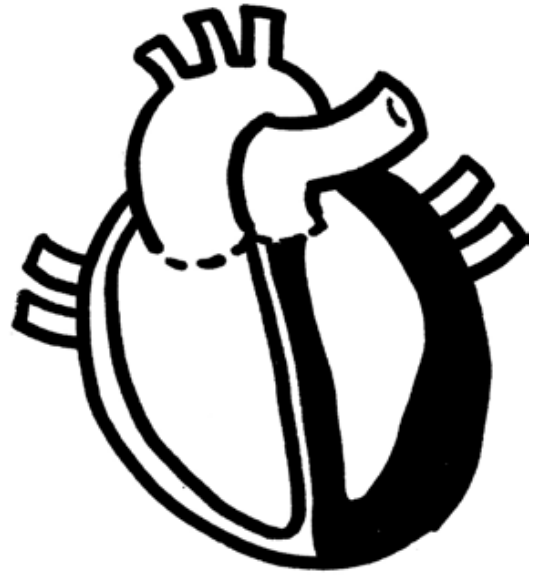

Right auricle
Left auricle
Right ventricle
Left ventricle



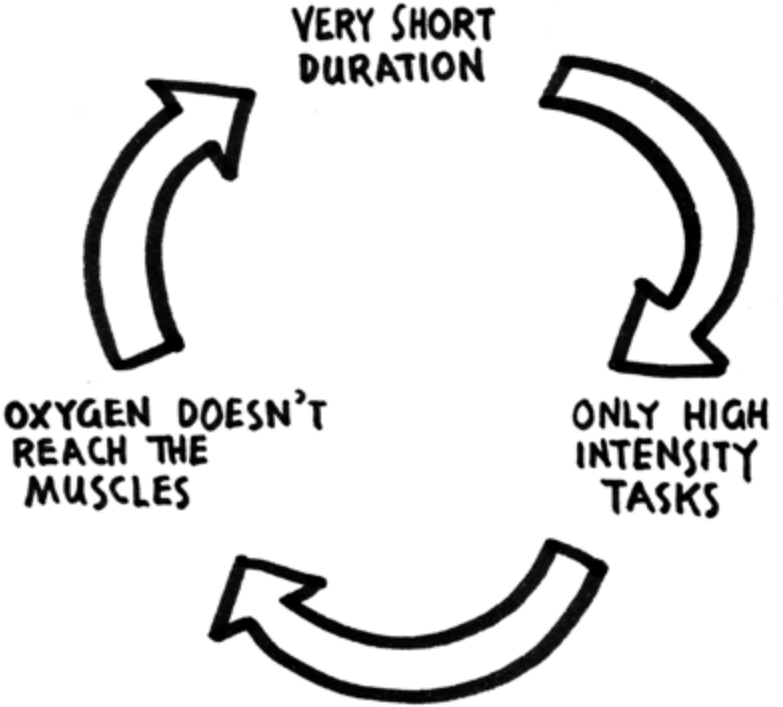
Untrained heart



Trained heart – aerobic only – increase in size



Trained heart – aerobic and anaerobic – increase in size and thickness of LV



of the reasons why the human body

Type of exercise	Calories burned	
	During exercise	After exercise / Due to exercise
Aerobic	More	Very little
Anaerobic	Less	**A whole lot more due to after-burn**

Energy systems	Aerobic	Anaerobic	
		Glycogen-lactic acid system	ATP-CP system
Energy production (ATP)	Unlimited	Limited	Very limited

Energy systems	Aerobic	Anaerobic	
		Glycogen-lactic acid system	ATP-CP system
Fuel used	**Carb, fat, protein (in this order)**	**Carbs (as glycogen)**	**ATP, CP, Glycogen**
Also	Can consume lactic acid	Produces lactic acid and Creatine Phosphate (CP)	Consumes CP
After-burn	**Very little**	**High**	**High**
Muscle fibre type	**Type 1**	**Type 2a**	**Type 2b**
Contraction ability	Slow	Fast	Very fast
Mitochondria density and myoglobin	Very high	Medium	Low
Activity	**Long-term aerobic**	**Long-term anaerobic**	**Short bursts of anaerobic activity**
Duration	Endless / hours together	Lasts for max 1-3 minutes	Less than 30 seconds
Example in sports	Marathon	Middle-distance running, up to 800m	Sprints

Energy systems	Aerobic	Anaerobic	
		Glycogen-lactic acid system	ATP-CP system
Examples of activities more relevant for me	Cardio or endurance training	Interval training, weight-training, sports at competitive level	Power training or heavy weight-training, sprint training or jumps

Performance time	Major energy systems involved	Examples
Less than 30 sec	ATP-CP	Shot put, 100m sprint, Tennis swings

30 – 90 sec	ATP-CP and Lactic acid	400m sprint, 100m swim
90 sec – 3 min	Lactic acid and aerobic	800m run, gymnastics, boxing, wrestling
> 3 mins	Aerobic	Marathon, jogging, long swims

Table:Various sports (competitive) and percentage contribution of energy systems

Sports	ATP-CP	Lactic acid	Aerobic
Basketball	85	15	-
Hockey	60	20	20
Football	90	10	-
Golf swing	95	5	-
Gymnastics	90	10	-
Tennis	70	20	10
Recreational sports Tennis / Squash / Frisbee / Basketball / Badminton / Cricket, etc., when we play in clubs / societies / mohallas, etc.	-	5	95

Rating Rate of Perceived Exertion RPE / Borg scale		
1 2 3 4	Very, very light Fairly light	Sitting or lying down / Little or no effort Walking around / light PA
5 6 7 8	Comfortably uncomfortable (aerobic) Somewhat hard (aerobic & anaerobic) Hard (anaerobic)	How you should feel with exercise – this is the target range for exercise to be effective
9 10	Very very hard Maximum exertion	Hardest you have ever worked Stop! (Overtraining)

Tendons	• Attach muscles to bones • Transfer muscular forces across the joints that hold the bones together
Bones	• Human body has 206 bones • They act alongwith muscles as levers to transfer force • Provide support to the skeletal structure • Act as protection for internal organs • Work as calcium storage units

Ligaments	• Hold bones together in joints • Attach bones to bones
Joints	• Location at which bones connect • Allow for movement and provide mechanical support to the body • Joints differ in their mobility according to the structure. E.g. hip can move more than the knee or shoulder more than elbow
Cartilage	• Cover the ends of the bones smoothly at joints • Allow the bones to slide smoothly over each other

Summary of rules to plan your strength training workout:

Basic rules	Instructions for sequence of strength training workout	Examples / Comments
1. Specific warm-ups	i. Perform warm up set of 12-15 reps before workout set ii. Use 50% of the main workout weight iii. Rest for 30 seconds to 3 minutes before starting main workout set	– Warm-up allows the blood flow to move through the specific muscle groups and warms up the specific joints that will be trained
2. Maximum muscle fibre recruitment	iv. Train large muscle groups before small muscle groups v. Train multiple joints before single joints vi. Perform higher intensity before lower intensity exercises vii. Allow for adequate recuperation between two weight-training sessions	– Back before biceps – Squats before leg extensions – Chest press before flies – After-burn and recovery continues for 36-48 hours after weight-training session

Basic rules	**Instructions for sequence of strength training workout**	**Examples / Comments**
3. Duration should not exceed 60 minutes	viii. Perform about 8-10 sets in total (excluding warm-up) that train major muscle groups ix. Perform 8-15 reps per set, with good form and to a point of fatigue x. Use both multi- and single-joint exercises	– Glycogen stores don't last beyond 60 minutes, usually 30 minutes – After glycogen stores are over, body starts breaking down muscle protein

THE reference table for strength training

Muscle group (from big to small)	Exercise(s)	Free / assisted on machine	Joints involved	Compound / Isolation
1. Legs – Note that compound exercises on legs use all the muscles of the lower body as well as the core.				
Glutes (hip muscle)	Squats Lunges Step ups Leg press	Free, done with a barbell on shoulders Machine with plates / stack	Hip Lower back Knee Ankle Machine reduces involvement of lower back but hip, knee, ankle active	Involves multiple joints to flex (bend) and extend (open out) simultaneously, so compound. Compound
Quads (front of the thigh)	Leg extension	Machine	Knee	Isolation
Hamstring (back of the thigh)	Stiff leg dead lift Leg curl	Free with barbell in hand Machine	Hip & knee Knee	Compound Isolation

Gastroc and soleus (calf muscle)	Calf raises Toe raises	Free with BB/DB or with machine	Ankle	Isolation
Adductor (outer thigh) Abductor (inner thigh)	Adductor Abductor	Mostly machines or done lying down (all side-kick varieties)	Hip	Isolation
2. Back				
Erector spinae (lower back, the muscle that runs parallel to the spine)	Dead lift Back extension	Similar to the squat but BB held in hand vs on shoulders. Lying on floor/bench	Lower back Hip Knee Ankle Lower back	Compound Isolation
Lats (middle back)	Bent over row 1 arm DB row T bar rows Lat pull down Seated row Pull ups*	Machine and/or free *mostly on machine as most of us too weak to do 8 -12 reps	Back Shoulder Elbow	Compound – moves through many joints
Traps (upper back)	Shrugs	Free with DB / BB	Shoulder blades, Shoulder	Isolation

3. Chest - Sometimes also called as upper & lower pec to mean upper or lower part of chest.				
Pecs (Chest muscles)	Chest press Incline/ Decline / Flat DB or BB press	Machine Done on a bench	Chest Shoulder (front) Elbow	Compound – moves through many joints
	Push up	Free but most not strong to do 8-12 with good form	Involves lower back & other core muscles too	Compound
	Flies	Can be done both free using DB or machine	Shoulder	Isolation – uses primarily one joint
4. Shoulders or Deltoid – has 3 heads or parts – back (posterior), middle & front (anterior) of the shoulder. Every upper body exercise will involve the deltoid. Training the back involves the p.delt & chest the a. delt. Depending on the choice of back & chest exercise, shoulder involvement varies.				
Posterior delt (back)	Rev fly	Free & machine	Shoulder	Largely isolation exercises – involves only one joint
Middle delt (middle)	Side laterals	Free & machine		
Anterior delt (front)	Front raises Overhead-presses*	Free & machine		*Overhead press is compound as it uses elbows too along with shoulders

5. Arms - Every upper body exercise will involve arms. The back involves the bicep & chest the tricep.				
Tricep (back of the arm)	DB extension Pushdown	Free Free or machine	Elbow Shoulder Elbow Wrist – small involvement	Isolation Compound
Bicep (front of the arm)	Curls of all types	Free / machine	Elbow	Isolation

Sample strength training plans

1-day split OR Beginner's plan

Exercise	Target muscle group	Sets	Reps
Leg press	Quads, glutes, hamstrings	2	12-15
Leg extension	Quads	1	12-15
Leg curl	Hamstrings	1	12-15
Lat pull down	Lats (back), traps, post. delt, biceps	1-2	12-15
Seated row	Lats (back), traps, post. delt, biceps	1	12-15
Dumbbell / Bar press	Pecs, ant. delt, triceps	2	12-15
Pec dec / fly	Pecs	1	12-15
Side laterals	Middle deltoid	1	12-15

2-day split OR Intermediate plan

Exercise	Target muscle group	Sets	Reps
Lower body			
Squats	Glutes, quads, hams, adductor, abductor, calf	2	10-12
Leg press	Quads, glutes, hamstrings	2	10-12
Leg extension	Quads	1-2	10-12

Leg curl	Hamstrings	1-2	10-12
Calf raises	Gastroc	2	10-12
Upper body			
Lat pull down	Lats (back), traps, post. delt, biceps	1-2	10-12
Seated row	Lats (back), traps, post. delt, biceps	1-2	10-12
Hyper extension	Erector spinae	1	10-12
Dumbbell / Bar press	Pecs, ant. deltoid, triceps	2	10-12
Pec dec / fly	Pecs	1-2	10-12
Side laterals	Middle deltoid	1 -2	10-12
Dumbbell curl	Biceps	1	10-12
Tricep push down	Triceps	1	10-12

3-day split OR Advanced plan

Exercise	**Target muscle group**	**Sets**	**Reps**
Lower body			
Squats	Glutes, quads, hams, adductor, abductor, calves	2	8-10
Lunges	Glutes, quads, hams, adductor, abductor, calves	2	8-10
Leg extension	Quads	1	8-10

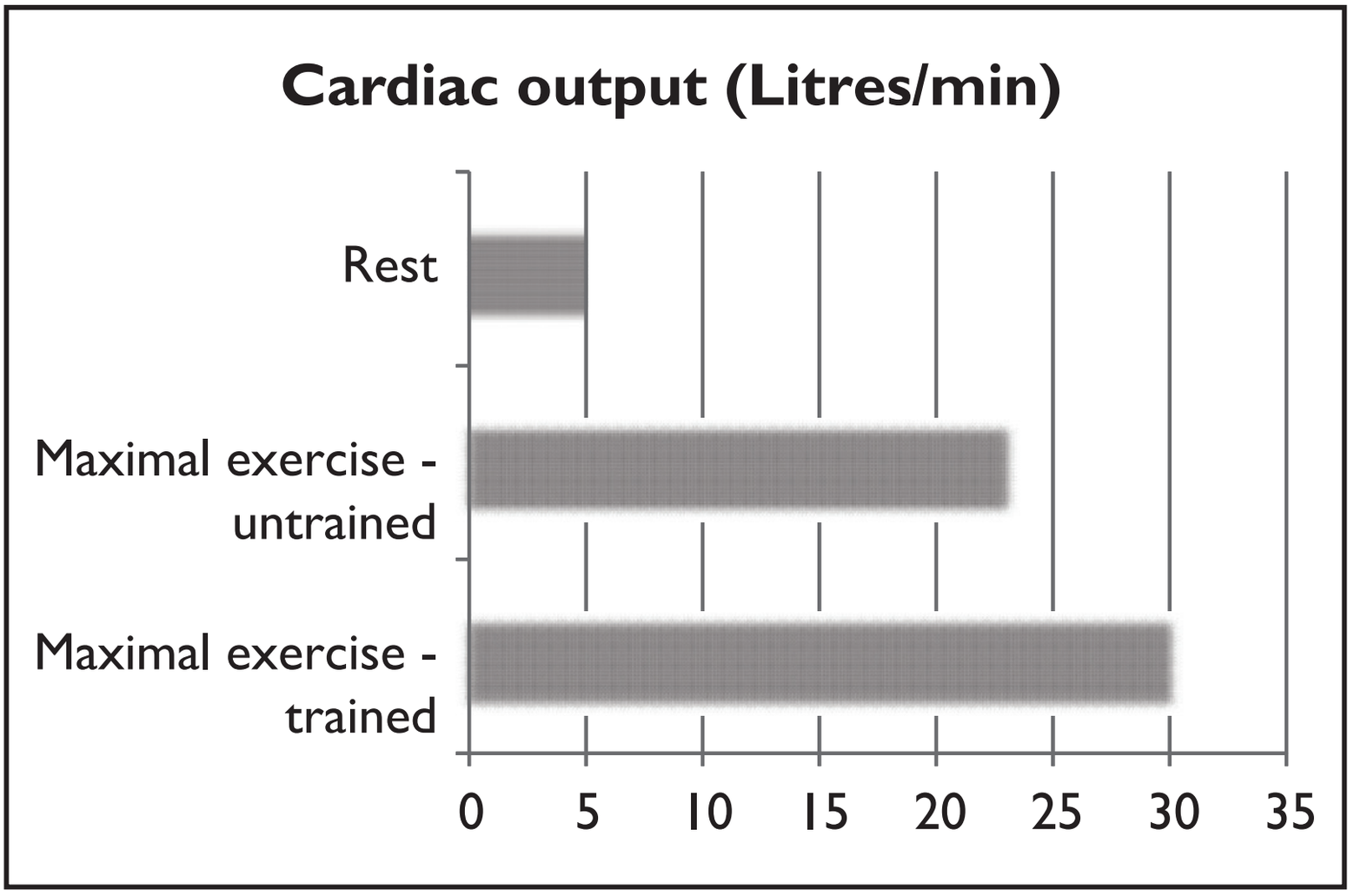
Stiff leg deadlift	Glutes and hamstrings	2	8-10
Leg curl	Hamstrings	1-2	8-10
Standing Calf raises	Gastroc	1-2	8-10
Seated calf raises	Soleus	1-2	8-10
Pulling muscles – back, post. delt, biceps			
Barbell row	Lats (back), traps, post. delt, biceps	2	8-10
Lat pull down	Lats (back), traps, post. delt, biceps	2	8-10
Shrugs	Traps	2	8-10
Reverse pec deck	Post. delt	2	8-10
Barbell curl	Biceps	2	8-10
Hammer curl	Biceps	1	8-10
Pushing muscles – Chest, ant. delt, triceps			
Incline / decline DB press	Pecs, ant. delt, tricep	2	8-10
Flat machine press OR seated chest press	Pecs, ant. delt, tricep	1	8-10
Pec dec / fly	Pecs	2	8-10
Overhead DB press	Pecs, ant. delt, tricep (more involement of ant. delt)	1	8-10
Side lateral DB	Middle deltoid	2	8-10
Cable push down	Triceps	1	8-10
DB extension	Triceps	1	8-10

Chalo, quick recap:

Pre-workout meals Gap of 20 minutes or less before workout • Fruit Gap of 60-120 minutes before workout • Homemade breakfast • Homemade lunch • Grilled veg sandwich	**How it helps** • Keeps blood sugars stable during workout • Blunts cortisol response during and post exercise • Allows quicker delivery of glycogen to working muscle group • Minimizes muscle tissue damage
4 R's post workout (within 20, max 45 minutes) • Water • Banana / potato / seasonal fruit • Protein shake (whey) • Vitamins C, E, A, minerals – Se, Zn, Cr	• Makes up for fluid and electrolyte losses during workout • Replenishes glycogen stores and shifts metabolic machinery from catabolic to anabolic • Reduces muscle damage and boosts immune response • Speeds up muscle and systemic recovery • Speeds up elimination of exercise by-products

4 hours post workout Wholesome meals after 1 hour of 4 R's and every 2 hours after that • Poha / upma / idli / dosa / paratha / nachni satva • Dahi / chaas / fruit • Paneer paratha / rice-dal-sabzi / veg pulao-raita / roti-sabzi-dahi	• Maintains increased insulin sensitivity • Sustains the anabolic state • Prevents muscle breakdown and accelerates tissue repair • Allows for maximum glycogen replenishment • Repays O_2 debt and clears out lactic acid • Prevents and repairs neurological damage or damage to motor neurons • Speeds up fat metabolism

Cardiac output at rest and during exercise



This graph is just to show you how though at rest both trained and untrained or athletes and sedentary have the same cardiac output, athletes can pump much more blood per minute during exercise and that's exactly why they can run faster or perform better than most of us.

	Time	RPE
Warm-up run	10 mins	3
Easy run	3 mins	5
Fast run	2 mins	6 - 7
Easy run	3 mins	5
Fast run	2 mins	7

Repeat easy-fast run cycle for 2-3 times.

Example of a training diary for cardio:

Exercise	Surface	Resistance	Time	Distance	RPE	Enjoyment	Date
Cycling	Road	Nil	20 mins	5	6	7	2/5/13
Walking	Grass	-	40 mins	3	4	9	5/5/13
Elliptical	Gym	2	20 mins	2.7	7	5	8/5/13
Swim	Water	Shallow	20 mins	4 laps	Dead	10	12/5/13
Rowing	Gym	1	10 mins	Not sure	6	3	15/5/13

The most important columns are the RPE and enjoyment

walking looked like this:

Week 1

Exercise	Surface	Resistance	Time	Distance	RPE	Enjoyment
Walk	Grass	-	40 mins	3 rounds around the park	4	9
Walk–run	Grass	10 meter jog every 5 mins	20 mins	Approx 1.5 rounds	8	8

Week 4

Walk	Grass	-	40 mins	3.2 rounds	5	10 (covered more ground in same time)
Walk–run	Grass	10 meter jog every 4 min	20 mins	Almost 2 rounds	8	8.5 (good fun)

Week 12

Exercise	Surface	Resistance	Time	Distance	RPE	Enjoyment
Walk	Grass	Doing some slopes in between	40 mins	4.5 rounds	5	9 (made some super friends)
Walk–run	Grass	Not needing to walk now	20 mins	Almost 3 rounds	8	10 (fab run)

Week 1

Exercise	Surface	Resistance	Time	Distance	RPE	Enjoyment
Swim	Water	-	20 mins	5 laps with floating / backstroke in between	8	9
Swim	Water	-	40 mins	Lost track of laps but swam continuously with only 5-6 breaks of 2 mins max	6	10 (gossiped with Neha all along)

Week 12

Swim	Water	-	20 mins	8 laps	8	9
Swim	Water	-	40 mins	4 breaks of 2 mins	7	9

The 14-week training plan for 21 km (half-marathon)

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	-	-	CSB / 1.3K	-	-	CSB / 2.0K	LR / 4K
2	CT	ST	SR / 2.0K	Rest	ER / 3.0k	CSB	LR / 6K
3	Rest	ST	SR / 3K	ER / 3k	ST	CSB / 1K	LR / 7K
4	CT	LT / 2K	LR / 6K	Rest	CSB / 2k	ST	Rest
5	ER / 3K	CT / 30 min	SR / 3K	LT / 3K	ST	CSB	LR / 7-9K
6	Rest	CT / 40 min	SR / 4K	ER / 6K	ST	CSB / 3K	LR / 8-10K
7	Rest	CT	LT / 4K	ER / 6K	ST	CSB / 2k	LR / 9 -11K
8	ER / 3-5K	ST	SR / 3K	LT / 6 -8 k	CT / 30mins	CSB	LR / 12 K

9	Rest	CT	LT / 4K	ER / 6-8K	ST	CSB	LR / 14-16K
10	Rest	CT / 50 min	SR / 4K	ER / 7-9K	ST	CSB / 2K	LR / 16-18K
11	Rest	CT / 20 min	SR / 4K	ER / 10K	ST	CSB	LR / 16K
12	Rest	CT / 20 min	SR / 4K	ER / 8-10K	LT / 6K	CSB / 2k	LR / 16-18K
13	Rest	CT / 30 min	SR 2.5K	ER / 5K	ST	CSB	LR / 10-12K
14	Rest	CT / 40 min	SR / 3-5K	ER / 2 K	LT / 20 min	CSB	D-day / 21K

CSB	Core strength and balance
LR	Long run
CT	Cross training (cycling, swimming, etc)
ST	Strength training in the gym
SR	Steady pace run (road running)
ER	Easy run (on a soft surface)
LT	Lactate threshold

Recreational sports

Effects of dehydration:	Signs of heat injury because of dehydration:
• Loss of strength from muscles • Decreased workout performance • Reduced cardiac output	• Feeling a chill and standing of hair on ends (piloerection) • Nausea and vomiting • Throbbing headache

Effects of dehydration:	**Signs of heat injury because of dehydration:**
• Reduced oxygen consumption • Poor thermoregulation • Decreased renal blood flow • Loss of electrolytes • Fast depletion of glycogen	• Dry skin • Unsteadiness and confusion • Anger

Pre workout 1. The night before or 4-6 hours earlier Dal-rice-sabzi with ghee / roti-sabzi-dal with ghee / Poha / Upma / Paratha / Idli-chutney-sambar Wholesome, regional, traditional meal with carbs, protein and essential fats	**How it helps** • Slow steady rise in blood sugar • Allows the body to optimize liver and muscle glycogen stores • Essential fats teach the body to preferentially burn the FFA (free fatty acids) during exercise • Puts your mind in 'workout mode' versus snooze mode • Delays fatigue during exercise
2. About 30 mins before exercise Fresh fruit – anything seasonal Banana preferable for intense exercises or exercise in warm conditions	• Allows you to top off liver glycogen stores • Ensures that blood sugars are at optimum • Allows the body a smooth transition to fat burning within minutes of exercise
During exercise 1. Indoors and not more than 50 mins of workout • Plain room temperature or cool water • Sip intermittently. Slow down and sip, don't gulp	• Allows the working muscle to contract without cramping • Better thermoregulation • Prevents heat injury
2. Longer than 60 mins and outdoors Hypotonic or diluted nimbu pani or glucose water with salt (use unprocessed salt for better ratio of Na and K – the two main electrolytes of the body)	• Has a protective effect on the vital organs – heart and kidneys • Delays fatigue and ensures optimum fat burning

Post workout Follow the 4 R. Rehydrate. Replenish. Repair. Recover Water. Carb. Protein. Antioxidants * For long runs – potato sandwich is a great idea. Carry it with you and have the protein shake after getting home.	• Allows the body to shift from catabolism to anabolism • Brings back the electrolyte balance of the body • Prevents the body from slipping into a hypoglycaemic state • Quicker glycogen replenishment • Prevents muscle tissue breakdown and accelerates recovery • Antioxidants keep the free radical damage in check • Lessens tissue damage and other aesthetic issues like tanning, break-outs etc.

Teacher / Lineage	Students – Schools of yoga
Swami Sivananda	Swami Satyananda – Bihar School of Yoga
	Swami Vishnudevananda – Yoga Vedanta Forest Academy
	Swami Chidananda – Divine Life Society, Rishikesh
Krishnamacharya	Pattabhi Jois – Ashtanga or Mysore style
	BKS Iyengar – Yoga with props, main centre in Pune
	Desikarchar – Vini yoga or Nada yoga, centre in Chennai

Yoga School	Main Centre	Specialty / Known for
Yoga Vedanta Forest Academy – Swami Vishnudevananda	Neyyar Dam, Kerala	• 12 basic postures that are easy to follow • Pranayama taught in every class • Chanting encouraged • Teacher training course – 1 month • Advance course – 1 month • Continuous training available across centres
Bihar School of Yoga – Swami Satyananda	Munger, Bihar	• Best known for its yoga literature • Every book is worth buying • Initiated women into sanyasa • Taught and propagated use of yoga nidra (even taught to jail inmates as part of reform) • Basic course – 4 months • Continuous training available in Munger, Bihar

Yoga School	Main Centre	Specialty / Known for
Divine Life Society – Swami Chidananda	Rishikesh, Uttarakhand	• Strong base of Vedanta and philosophy • Teaches and promotes sadhana as a way of life • Conducts talks daily – open to all • Anyone can go and meditate, chant in the halls • Runs medical facilities, orphanage, educational institutes • Has 1- and 2-month courses but only for men
Ashtanga – Pattabhi Jois	Mysore, Karnataka	• Style known as Mysore / Ashtanga / Vinayasa yoga • Dynamic flow from one asana into another with the breath • Probably the most popular form of yoga • Suryanamaskars are taught as the foundation of the practice • Practice broken down to 6 series and students progress at their own pace • New asanas introduced only after students perfect each posture in a given series • No certification courses offered, students have to go to Mysore and learn • Dedicated students and serious practitioners can lead class as a teacher

Yoga School	Main Centre	Specialty / Known for
Iyengar yoga – BKS Iyengar	Pune, Maharashtra	• Known for precision in asanas • Makes use of 'props' – belts, ropes, bricks, benches, chairs to make asanas accessible to all • Challenging classes and strict teachers • Doesn't teach pranayama until student is considered ready by teacher • Offers certification abroad but in India, students handpicked to teach • Indian teachers will have 8 or more years of practise • Abroad, about 2-3 years to get certification • All teachers visit Pune to learn from senior teachers under the eagle eye of BKS Iyengar • Solid modules of therapeutic yoga
Nada yoga – Desikarchar	Chennai, Tamil Nadu	• Style also known as Vini yoga • Combines asana with chanting • Special courses offered on Vedic chanting • Offers courses of varying time, including a 2- or 3-year diploma

Will	Will not
Ask you to give details of health and medical history	Promise quick cures at the end of a certain number of sessions
Ask you to wear comfortable clothing	Make it compulsory to wear certain colours or brands for 'optimum benefits'
Ask you to eat a light meal before class – either a fruit or 2-3 hour gap after a meal	Ask you to come on an empty stomach or have unrealistic meal gaps (4 hours and above)
Encourage you to eat home-cooked, local, seasonal including all grains	Encourage soups, salads or any diet plans based on avoiding carbs and counting calories
Make it clear that asanas are essential part of wellbeing and evolution	Look down upon asanas
Believe that pranayama done wrongly can harm more than bring any good	Promote pranayama for quick enlightenment

Will	Will not
Believe that you need to first prepare your body and breath for meditation	Teach that meditation will show you lights (camera and action)
Teacher practises what she/he preaches	Have teachers that behave like gyaanis / realized souls
Class is ventilated and clean	Have classes that are either too cold or too hot
You will be encouraged to walk straight	Encourage you to walk with a halo
Kapalbhati will be taught as a kriya and with a lot of discretion	Reduce kapalbhati to a must-do exercise for losing the paunch
Class sequence based on the effect asanas have on the subtle body	Have a class sequence based on various body parts — chest, back, arms, abs, thighs, etc.

Typically, yoga schools that are high on integrity will also have

Sequence	Asanas	Effects
Prayer	To Patanjali *Hatha Yoga Pradipika* Saraswati or Ganesha Sahanavavatu Om Invoking name of God	• Bringing the focus to the practice of asana • Dedicating practice to a higher reality • Asking for grace before practice
Warm-up	Suptapadangusthasana Suryanamaskar Uttanasana Adhomukhasvanasana Variety of standing postures like – trikonasana / virabhadrasana	• Awaken the mind and senses • Increase blood flow to the periphery • Prepare for the practice
Inversions	These will usually follow the basic sequence – *Sirsasana Sarvangasana Halasana *Beginner classes may teach sirsasana at the very end or not teach it initially	• Learning to stand on your head / shoulders • Involving underused neuro-muscular pathways • Overcoming conditioning / convention

Sequence	Asanas	Effects
Forward bends	Paschimotanasana Janu sirasasana Prasarita padottanasana Marichayasana 1	• Improving flexibility of the lower back and hamstrings • Learning to let go • Creating awareness of the back body (often ignored)
Back bends	Dhanurasana Bhujangasana Ustrasana Setubandhasana	• Improving strength in the spine and back muscles • Breaking through insecurity and fear • Improving health of digestive organs
Twists	Ardha matsyendrasana Bharadwajasana Parsvakonasana Anantasana	• Increasing and maintaining mobility of the spine • Churning out the physical and mental toxins • Improving blood sugar control and fertility
Balancing asana	Kakasana Mayurasana Vrksasana Ardhachandrasana	• Improves strength of the core muscle groups • Learning to uplift while being grounded • Creating a sense of balance in the mind and body

Sequence	Asanas	Effects
Restorative asana	Supta virasana Supta badha konasana Viparit karani Savasana	• Relaxes the body and the mind • Anti-ageing and stress-busters in nature • Restores the blood circulation, breath and lowers the heart rate

Ok, now this was tough for me to write given the fact that

Week 1 Week 2	Work at decreasing the time taken to cover the same distance (or same number of rounds), even if you reduce it by few seconds, it is progress. Maintain the decreased time and further reduce it by a few more seconds.	Reduce time so that RPE goes up in the range of 7-8 but never to 9
Week 3 Week 4	Work at adding ½ round without compromising on the time achieved in Week 2. Work at adding a little more distance even if it is just 10 or 20m from what you achieved in Week 3.	Increase distance so that RPE goes from 6 to 7 but never to 9
Week 5 & 6	Work at maintaining the distance achieved in Week 4 and the speed achieved in Week 2.	Maintain and practise till RPE drops to 6 and only then take it from the top.
Week 7	Take it from the top. Start the same process of Week 1 all over again and apply the same steps till the end of Week 6. Do not lose patience and rush the process, it will only lead to you wasting time, nursing injuries.	

Week 1& 2	Choose any one compound exercise for any one large muscle– e.g. squats for legs, dead lift for the back or dumbbell press for the chest and try increasing a rep for that exercise. Even if half a rep increases it is progress, alternatively work on increasing a set at the same workload, i.e. the same weight you were carrying. E.g. If you are carrying 10 lbs and doing a dumbbell press of 2 sets and 10 reps each. Either attempt to take the 10 reps to 11 or add a 3rd set. Even if you are able to push for 4 – 5 reps in the 3rd set and not to the usual 10, it is progress.	Being able to add 5 reps to your 10 reps, or ability to do full 10 reps in the 3rd set usually indicates poor exercise load to begin with.
Week 3 & 4	Work at increasing the workload or the weight you carry on the chosen exercise. So take the weight from 10 lbs to 12.5 lbs. Expect the reps to fall from 10 to a range of 6-8. If the reps fall to 3-4, then perform the rest of the 6 reps (to meet rep range of 8-10) at a lowered weight. So you can even do 2 reps at 12.5 and the rest 8 reps at 10. Do only one set at the higher weight and perform remaining sets at the same poundage, 10 in this case.	Most gyms have dumbbells separated by a 2.5 lbs, if that is not the case in your gym, ask the gym owner / management to buy more dumbbells.

Week 5 & 6 or 8	Work at maintaining all you taught your muscles from Week 1 to 4. You will see an increase in the reps of the third set along with increase in the reps of the first set where you are pushing the 12.5 lbs.	Allow your body the time to adapt and do not rush the process, even if it takes 8 or more weeks.
Week 9	Take it from the top, this time for a different muscle group. So say if Week 1 to 8 the overload was for chest, 9 to 16 can be legs, and then for the back.	

3. Yoga It is not so straightforward to apply the principle of

this is what we found:

The original workout recall:

Day 1	*1 n half hour of cardio ie 20 min tread mill, 15 min cycle, 15 min cross trainer, floor exercises twister n sides*
Day 2	*1 hour of wt training and 15 min of treadmill and 15 min of cycle*
Day 3	*same cardio for 1 n half hour*
Day 4	*missed gym so did aerobic dance for 15 min, biceps n shoulders without dumbless, a total of 20-25 min*
Day 5	*wt training for 1 hour and tread mill for 25 min and twisting for 2-3 min*
Day 6	*rchd home wanen to workout but felt very dizzy so jus 10 min of tread mill n I stopped*
Day 7	*same thing again I went to gym but was dizzy. So jus did 10 min of cycle n 5-7 min of treadmill but cudnt do…*

Modified workout plan:

Day 1	Run and walk	30 mins RPE 6-7
Day 2	Week by week sequence from Iyengar Yoga beginners guide.	We had two reasons for this – 1. To learn inversions – we need to balance work and family life without feeling that we are losing out on either (girls want it all) so the inversions keep our strength and hormones in a good place. And all that mental activity that her job put her through meant we had to work on providing more oxygen and blood to the over worked brain. 2. Cellulite – the precision of asanas that the Iyengar style teaches helps you rid the body of the ugly orange peel – because it teaches you how to reach deep within and employ the unused muscle tissue lying under layers of fat.
Day 3	Upper body strength training	Sample 2-day split from strength training chapter
Day 4	Cardio	45 mins RPE 6-7 And because she so loved doing abs, she did two sets of regular crunches before the cardio (not after, better use of glycogen).
Day 5	Rest	

Day 6	Lower body strength training	We sandwiched legs workout between two days of rest because her current assignment had a lot of walking already. The rest day before legs was to ensure that she got a chance to replenish as much glycogen as she could so that legs could get a chance to train under a full tank.
Day 7	Rest	The next day was rest too, as she had very little scope to actually rest the legs given her walking around in the hospital. But with those 24 hours of full recovery she could walk and not drag herself on sore legs at the work place.

Original workout recall:

Day 1 :- 45 mins Cardio — 300 Cals
ABBS :- 4 Variation 3 sets 20 Reps
Waist : 3 " " "

Day 2 : 20 mins EFX :- 100 Cals
Upper Body :- 2 Variation 20 Reps.
Low Back :- 2 Variation 25 Reps.

Day 3 :- 40 mins Cardio — 250 Cals
Legs :- 6 Variation 20 Reps
All with Body Weight.

Burns 50 calorie on treadmill in 10 mins
Burns 105 Carlorie on EFX in 10 mins

Lifts upto 3 kg Dumbell.

He then repeats the same on day 4, 5 and 6.

played too), we devised a training plan.

Day 1	Walk/jog on sand	30-40 mins RPE – 6-7 Kept this on Sunday as that was holiday so enough time for bathing, etc.
Day 2	Rest OR Suryanamaskar 2 rounds	Learnt Sivananda style suryanamaskar from the same aunt who wanted Nashira to get a new husband ☺
Day 3	Upper body strength training	Cost him about 30 mins and didn't break into too much of a sweat so quick shower and change in the gym and off to office.
Day 4	Rest	
Day 5	Lower body strength training	From the 2-day split plan as in the sample workout. Legs are always the biggest calorie burner and the real 'lose the paunch' agents.
Day 6	Rest	
Day 7	Climbed stairs in the building	Began with climbing 6 floors (RPE at 7-8) at a time. Climbed up and came down by lift. The goal was to climb higher and higher in the same 20 mins. This trained him in the anaerobic zone and the Day 1 training used all the lactic acid he produced for generating ATP aerobically. Well atleast that's how we planned it on paper ;).

Original workout recall:
Exercise Tracker

Date	*Exercise*	*Sets*	*Weights (Lbs/Kgs)*	*Repetitions*
29th Aug	*Leg Press/* *Leg Curl/* *Leg Extension* *Adductor/* *Abductor* *Dumbell Press* *Seated Rows* *Push ups/* *Dumbbell Curl*	*2* *2* *2* *2* *2* *2* *2* *2*	*20/* *40 lbs/* *40 lbs/* *25kgs* *20/25 lbs* *5 /10 lbs* *40 lbs* *40 lbs*	*20* *20* *20* *20* *20* *20* *20* *20*
31st Aug	*Leg side kick (pyramid set)/* *Leg Curl / Seated leg press (super set)* *Leg kick back (in glute machine)* *Lying leg press/ leg ext/calf raise (super set)*	*3 /* *3 /* *3*	*50lbs* */80lbs* */30lbs*	*15*
On all other days I go for a walk or walk on treadmill at very high speed and incline.				

Modified workout plan:

Day 1	Lower body in the gym	From the 2-day split plan. To optimize muscle fibre recruitment to gain more tone and bone mineral density in the legs.
Day 2	Rest / easy walk on the treadmill or grass	Just to keep her active and to go easy on the joints.
Day 3	Spinning class in the gym	Cycling is a non-weight bearing activity.
Day 4	Upper body in gym	To ensure proportionality in upper and lower body.
Day 5	Treadmill or walk 40 mins with intermittent jog.	Got her off the incline but added the jog to help her feel that she is 'sweating it out'.
Day 6	Rest	
Day 7	Day with the kids at the park	Free play – active interaction outside of studies;) Also sent a strong message that play is as important as school (if not more).

Day 1	Rest	
Day 2	Walk in the park – chose grass or mud path	Steady state – walk at a speed that can be maintained easily for 30mins. RPE of 4-5
Day 3	Strength training for full body	Till the legs don't gain enough strength it's foolish to stimulate them with too many sets or keep a separate training day for them. They have to be stimulated with patience and given enough time to recover and adapt from the stimuli.
Day 4	Rest	But walking around at home is encouraged.
Day 5	Cycle on a stationary bike	Work at covering more distance today and limit it to 20 mins. RPE of 5-6
Day 6	Iyengar yoga therapy class	Helped her with pelvic opening, strengthening of the quads, flexibility of the hamstrings and strength in the butt.
Day 7	Walk on treadmill	For 20-30 mins (because she liked the treadmill, plus her son specially got it for her so she didn't want to waste money now). RPE of 4-5

Day 1	25m sprints	6 times with 1 min walk in between.
Day 2	40 mins jog	On a soft surface, for her it was on the beach.
Day 3	Lower body strength training	Cost her about 45 mins to an hour. Worked on increasing her strength in quads, hips, calves, hams and legs are always the big calorie burners ;).
Day 4	Stretching class	Thankfully her trainer conducted a stretching class too, which madam earlier didn't go to because 'it was not for burning calories'.

Day 5	Any one of the 3 workouts which she 'loved' and didn't want to give up on	Ideally would have liked to see her on one of the cardio machines, either the elliptical or cycle, to reduce the load / impact on the knees.
Day 6	Upper body strength training	Upper body strength is crucial because once the knee aches, the hip, lower back, upper back, neck all begin to overcompensate or feel the strain. It's important to protect all joints, not just the aching ones.
Day 7	Rest	Thankfully one rest day

Original workout recall:

Group 1 *SURYA NAMASKAR -12* *Core Work - single leg up, then opposite side, up again then down to 20 deg - 10 on each leg* *Did the same with two legs* *Cycling* *Bending and straightening* *Open the leg wide at 90 deg and closing* *Leg up to 90 Deg - in 8 counts, dropping the leg to 20 Deg* *Rolling and Rocking* *Utkat asan with wall (Had the block bet the thigh)* *Utkat asan on the mat* *Garur asan with the wall* *Garur Asan on the mat* *Warrior 2* *Pashvakon* *Pashvoveer* *Warrior 1* *Wide angle forward bend and then into side lunging* *Wide angle forward bend to lunge by taking the right arm under the leg - Both sides* *Knelt down and then extend one leg and then side stretching (Gate Pose)* *Pigeon* *Wide angle chakki* *Wide angle boat rowing* *Squatting and wood Chopping* *Squat and then forward bend* *Kapal Bhati (3 sequence of 100 each)*	*Group 2* *Tadasan* *Triyaka Tadasan* *Kati Chakra* *Single leg lift and then double leg lifts* *Single circles and then double* *Single leg cycling and then double leg cycling* *Knees circle* *Spinal twists* *Rolls & Rocks* *Navasan* *Sit with leg stretch and do shakti bandha including chakki and boat rowing with legs together and legs apart* *Squat* *Wood chopping* *Twisting* *Crow walking and then back* *Squat forward bending* *Classical surya Namaskar 12* *Anuloma – Viloam – 10 rounds`* *Nadi shodhan – 10 rounds* *Om meditation – 10 rounds* *End with Savasana.*

	Exercise Plan	Remarks
Day 1	Lower body strength training	Anaerobic
Day 2	Rest	NA
Day 3	LT (Running/Cycling)	Lactate threshold
Day 4	Tennis Day	Aerobic
Day 5	Upper body strength training	Anaerobic
Day 6	Rest	NA
Day 7	Tennis Day	Aerobic

What is said	What you should hear
She is hardly size zero but she's bloody fit.	She's bloody fit.
She's so regular in the gym, must have a very caring husband.	She's very regular in the gym.
Look at that paunch but she has the confidence to carry off that skimpy thing.	She has the confidence to carry off anything.
You have such a beautiful face, you will look so much prettier if you lose some weight.	You have such a beautiful face, so pretty!

He's constantly looking at himself in the mirror after he has gotten regular at the gym.	He has gotten regular in the gym.
Will always sleep till late but if it's cricket / football, etc., will bloody wake up at 5 a.m.	He is commited to his game.
Won't eat a thing post dinner even if you beg at her feet.	She's very committed to eating right.

Exercise tracker

Maintain these sheets so that you can keep a track of your workout, spot mistakes and make progress. Maintain the tracker for 12 weeks in a row and it can teach you much more than any fitness guide.

Weight training days

Date	Exercise	Sets	Weights (Lbs Or Kgs)	Repetitions

Cardio days

Date	Exercise	Speed/ Rpm	Incline/ Resistance	Time (Mins)	Distance (Kms)	Rpe

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