Newsletter of
Indian Arthroplasty Association
Welcome to the Silver Jubilee Year of the Association !

IAA SUMMER - 2021

Newsletter Message

Dear Friends,

As we are slowly recovering from the second wave of the pandemic, we present you our long-awaited newsletter. IAA has been in the forefront of the academic training by updating our Arthroplasty Surgeons about the recent advances through monthly webinars and you will be happy to know that we have completed 17 such events and still counting.

Soon we shall have our Arthroplasty Special issue of Indian Journal of Orthopaedics in Sept/Oct 2021. I must thank the elite Arthroplasty group of surgeons for their tremendous response to this special issue. We have so many articles received that our reviewers and editorial board are finding it difficult to find which one should be preferred. But as I have mentioned in my invitation letter that the manuscripts which will have impact on Current Arthroplasty Practice will be preferred and soon the editorial board will be selecting 5 such from India and 5 from outside India to make this issue special one.

Friends, our long-awaited Annual Conference is couple of months away and soon we shall be declaring it as per the prevailing Govt COVID guidelines. So please get ready to have a personal interaction and meet and greet each other after almost 2 years.

This newsletter is one of its kind with articles on life style, career changes, robotics and recent product portfolios from our manufacturers. On behalf of all of us, I thank Dr. Krishna Kiran and all our contributors for taking all the pains to bring this Newsletter to its present shape.

So Happy Reading!

Any new suggestions are welcome anytime at indianarthroplasty@gmail.com or drssmohanty@hotmail.com.

Best regards,

Prof. (Dr.) Shubhranshu S. Mohanty,

President, IAA.

Editorial

Dear Friends,

Welcome to the latest edition of IAA newsletter. The COVID 19 pandemic has altered the way we perceive the world and interact with each other. Two things that have stood out in the wake of the pandemic are importance of health and use of technology to overcome challenges. This edition focuses on these two things, role of hand -held robotics in knee arthroplasty and ways to improve health and fitness. We also have a wonderful perspective on mid life career shift for orthopedic surgeons by one of our colleagues who has been there done that. Hope you enjoy the read.

Stay safe and see you at a physical IAA meet soon.

The views expressed are those of the authors and must be interpreted in that light.

Regards

Krishna Kiran Eachempati
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Value of Hand Held Robotics in partial and total knee replacement

Anoop Jhurani, Jaipur

Partial and total knee arthroplasty are successful treatment modalities for end stage knee arthritis. With increasing life expectancy there is a significant growth in patients opting for knee arthroplasty. Inspite of advances in implant designs and materials the functional outcomes and patient's satisfaction of TKA remain inferior to total hip arthroplasty. Around 20% patients remain dissatisfied following TKA. To overcome this, Computer assisted-surgery emerged as tool to help plan and execute surgery with greater precision and consistency. Computer assisted surgery (CAS) has been used for last 2 decades to improve component positioning and overall mechanical alignment.

However, there are some limitations of CAS which can be overcome by robotic surgery [Table].

Robotic assisted surgery (RAS) has been introduced lately to further improve alignment and balance in all 3 planes. Similar to CAS it allows the delivery of pre-operative plans and verification of intra-operative steps with added advantage of improved control of cuts in sagittal plane.

With the advent of robotic system in arthroplasty, there has been a significant increase in the accuracy of prosthesis positioning, improved survivorship and better functional outcomes. Robotics helps in the assessment and addressing the soft tissue tension with greater accuracy than navigation. Robotics also enables the surgeon to execute the bony cuts with increased precision thus getting accurate limb alignment and gap balancing.

Advantages of robotic over navigation

	Navigation	Robotics
Control over depth of bone cuts	Surgeon has control over saw which can cut more bone than planned.	Accurate bone cuts
Flexion/extension of femur cut	Poor control, mostly cut in > flexion than planned	More accuracy of distal cut in sagittal plane
Control on tibial slope	Poor control, mostly slope increases due to saw digging in soft bone	Better control of tibial slope
Pre op planning for bone cuts and soft tissue release	Can't be planned	Can be planned
Precision of bone cuts	Upto 1 mm	Upto 0.1mm
Gap balancing	Poor control	Better control Usually balances with minimal thickness insert
Software for UKA	Most navigation system don't have precise UKA softwares	Support both UKA and TKA

Robotics in UKA

UKA is mostly done for AMOA of the knee with intact ACL and deformity < 10 degrees in coronal and sagittal plane. UKA has several advantages over TKA like reduced operative time, decreased intra-operative blood loss, restricted peri-articular soft tissue trauma, preserved bone stock, preservation of both cruciate ligaments and better restoration of native kinematics. However, UKA is associated with decreased implant survivorship and increased revision rates. Surgeon induced implant mal-positioning and surgical over correction are main reasons of implant failure in UKA. Aseptic loosening and progression of arthritis to other compartments are also common reasons for failure in UKA. Low case volume is also found to be a risk factor for failure.

To overcome these drawbacks, robotic surgery was introduced to provide accurate positioning and alignment with real time ligament balancing. The unique advantage of robotic UKA is that it provides a high level of accuracy in prosthesis positioning and balancing for even a low volume arthroplasty surgeon, thus improving surgical outcomes.

Robotics assisted surgery has been found to reduced postoperative pain, decreased analgesia requirement, reduced inpatient physiotherapy, decreased hospital stay, improved functional outcomes, decreased revision rates and improve knee excursion during weight-bearing.

Figure 1. The pre-operative scanogram shows a < 10-degree varus alignment and medial compartment OA in bilateral knees.

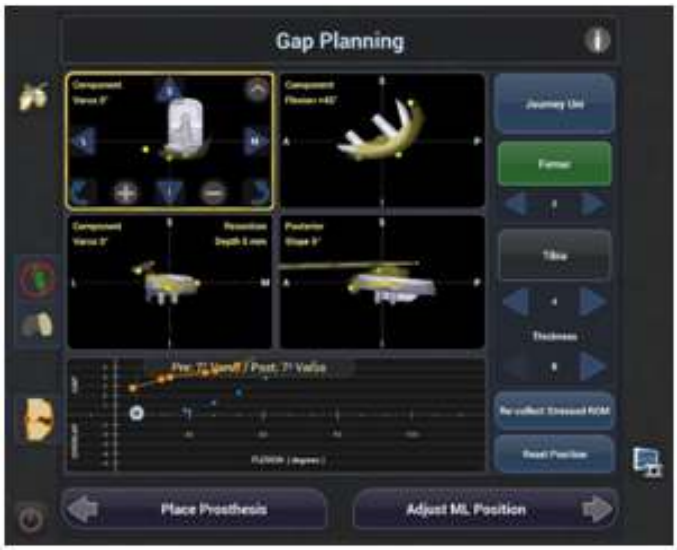

Figure 2: The preoperative analysis graphs shows a 7-degree varus deformity with loose extension and flexion gaps (flexion > extension). Orange dotted graph

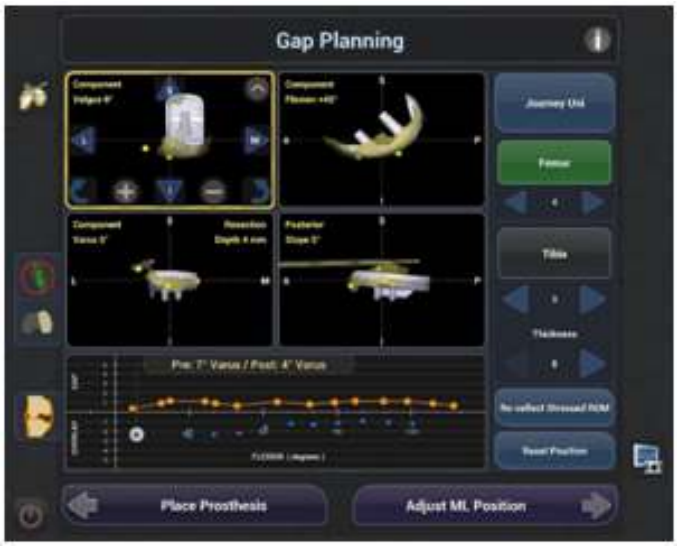

Figure 2. Adjustments made at pre op planning stage to bring the orange graph near the midline with opening of 1-2 mm through out the arc of motion

- The femur component was upsized and brought posterior to tighten the flexion gap.
- The femoral component was also brought distal to decrease the distal femoral resection, thereby decreasing the extension gap.
- Tibial resection is always kept minimal at 4/5 mm with 5-7 degree slope. This prevents failure on tibial side.
- Such precise planning and assessment of soft tissue balance unique to every knee is possible with RAS.

Figure 3. screen showing burring of femur and tibia condyle

Figure 4. Femoral and tibial preparation with a burr in exposure control mode.

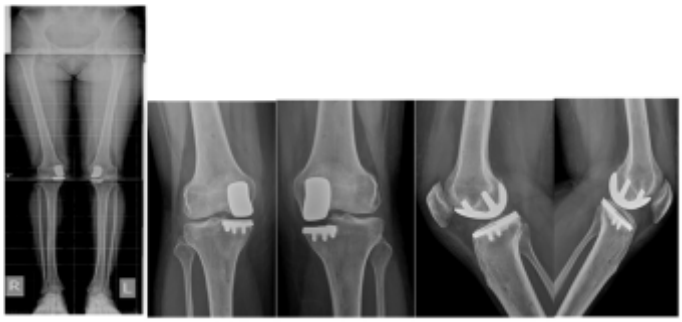

Figure 5. The postoperative radiographs show 2 degree of varus alignment and well-fixed partial knee prosthesis.

Robotic TKA

Obtaining optimal limb alignment and ligament balance has been the goal for total knee arthroplasty since its inception. However, this goal can be difficult to achieve in every case, especially with severe coronal and/or sagittal deformity. Robotics was developed to increase the ability to accurately achieve this goal in every case, irrespective of the extent of deformity. Robotic-assisted TKA has found to reduce the number of mechanical axis outliers along with improving the clinical and functional outcomes after the procedure.

Robotic arthroplasty has also been shown to more accurately restore the native joint line, posterior condylar offset ratio, and Insall-Salvati ratio compared to conventional or computer assisted arthroplasty. Improved accuracy in achieving these radiological outcomes leads to increased patient satisfaction, greater stability, and improved kinematics through the arc of motion following TKA.

Robotic TKA helps in getting accurate bone cuts and titrate soft tissue releases according to the knee kinematics of individual patient thus enabling the surgeon to customise the planning according to unique soft tissue behaviour of the given knee. This helps in better soft tissue balance throughout range of motion. Robotic screen shows real-time interpretation and feedback of soft tissue behaviour intraoperatively which allows to optimise ligament releases.. This helps in improved prosthesis survival and function along with added advantage of reduction in instrument inventory.

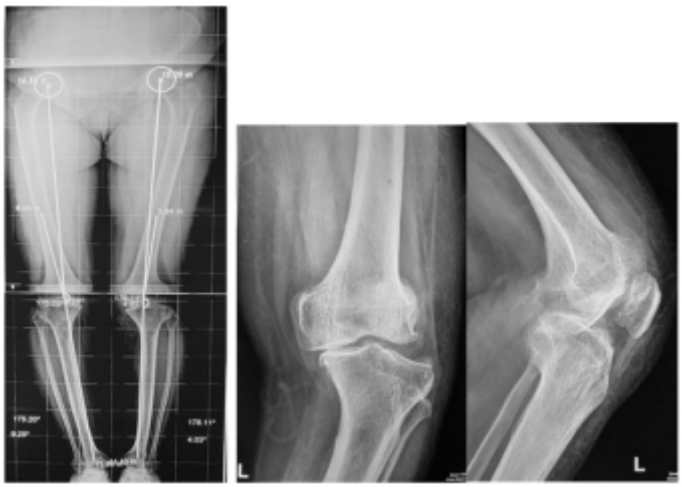

Figure 6. The preoperative radiographs show subluxed knee with lateral joint space opening. of

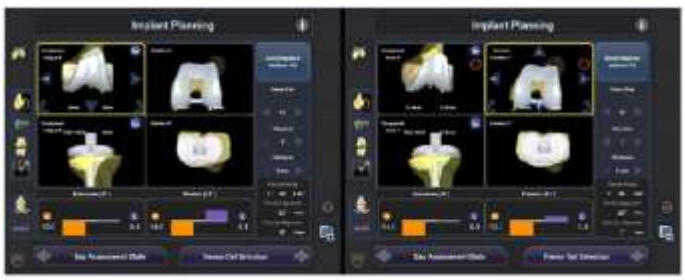

Figure 7. The robotic values shows 23 degree varus with neutral sagittal alignment. It also predicts the gap balance before and after planning of the cuts. The distal femoral cut was reduced to 8mm since correction of the varus deformity would have resulted in an increased extension gap. The residual tight medial gap required downsizing of the tibial component and postero-medial soft tissue release.

Figure 8. Distal femur burring in exposure control mode

Figure 9. Proximal tibia burring

Figure 10. The post-operative gap assessment show complete correction of the coronal plane deformity with mediolaterally balanced knee throughout the arc of motion.

Figure 11. Well aligned and well balanced knee seen on post-operative radiographs.

Handheld Precision Milling for orthopaedic surgery

Riddhit Mitra, *MSc.*
Matthew Russell
Smith and Nephew

Robotics-assisted surgery has gained increasing popularity in the last decade as surgeons aim to increase precision and accuracy of their work in the operating room. With computer-assisted implant positioning, surgeons can better predict and influence surgical outcomes by considering the unique biomechanics of each individual patient's knee or hip joint, and simulating the final position of an implant. Robotics-assisted bone preparation ensures the bony resections are accurate to the surgical plan.

Based on planned implant position and soft tissue considerations, robotics-assisted systems can provide surgeons with virtual tools to make informed patient-specific decisions for knee replacement, and with intelligent tools to implement those decisions. This is achieved by customizing the surgical cuts rather than prosthesis designs, while staying within clinically acceptable boundaries.

Although conventional knee and hip arthroplasty is considered a successful intervention for end-stage osteoarthritis, some patients still experience reduced functionality and require revision procedures.[1]

The factors that influence successful results and durability of knee and hip arthroplasty include appropriate surgical indications, implant design, component alignment and fixation, and soft tissue considerations.

From the late 1960s, development of total knee implants began with condylar knee designs, and since then, implants and instruments have vastly evolved to accommodate familiar tools such as precision saws and implant designs that are repeatably manufacturable to provide better function and quality of life. During this evolution, knee implant designs branched into anatomic and functional geometry, where anatomic implants aimed at preserving the cruciate ligaments but were limited by expensive manufacturing and challenging execution. Functional designs on the other hand, focused on measured resection and post cut gap balancing techniques in order to restore joint function by optimizing the use of a serially produced implant design.

While functional designs are the more prevalent choice for replacement surgery today, outliers from saw-based execution may occur in as many as 15% of cases in the coronal plane, with up to 40% having unsatisfactory alignment in the sagittal plane.[2] While navigation and patient specific cut guides have helped increase the accuracy in alignment, studies have shown that 15-20% of cases may still fall outside of acceptable range of desired outcomes.[3]

This brings us to a fundamental flaw in saw-based methods for bony resection. Regardless of the accuracy of the starting position of the blade, skiving may occur. Due to the mechanics of a cantilever blade experiencing forces while passing through varying bone densities during a cut, fine-tuned control must be maintained to ensure accuracy of the cuts in frontal and sagittal planes.

While bone milling could be a more accurate solution when considering precise point to point preparation over an entire bone surface, earlier systems did not gain widespread clinical acceptance due to the challenges of human control of a milling tool. With the addition of navigation and robotic-assisted control, integration of precision milling tools was inherently bulky and costly. Additionally, they were often accompanied by invasive instrumentation, increased operating time, and safety concerns.

In the past decade, advances in technology have allowed for precision milling tools to become smaller in form factor leading to handheld execution. This is a novel form of robotics that gives the surgeon refined control across all surfaces of the knee while preventing deviations from the surgical plan. It is currently in its second generation with multiple control modes where a milling tool extends out of a safe guard only in the regions of cutting up to 12 millimeters, or starts and stops milling autonomously when the depth of bone preparation has been reached. This technology provides sub-degree and sub millimeter accuracy over the entire surface of bone preparation. With the ability to use such tools and customize the cutting geometry, the doors open for more fit-for-purpose implant designs where bone sparing constructs, and rounded cut designs can be considered. Such inset components could better preserve cruciate and collateral ligaments with the goal of improved recovery and function.

As the latest systems with precision milling tools allow for faster

execution, robotic-assisted surgery times are trending closer to manual procedures. With standard manual gauges and instruments being replaced by computer-assisted registration, the benefits of precision milling begin to outweigh the limitations originally observed. Further advancements in electromechanical systems and computational processing will improve on perceived limitations of precision milling tools, allowing for potential wider adoption of such technologies beyond knee arthroplasty.

In the future robotics will allow for even greater precision and accuracy in the OR, and the data and insights gathered from these digital tools will be essential in developing the next generation of customizable implants to deliver truly optimized patient-specific care.

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Mid Life Career shift: My experience and a point of view!

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> "Think about the metric by which your life will be judged, and make a resolution every day so that in the end, your life will be judged a success"

Prof Clayton Christensen in "How will you measure your life?"1

I am an orthopedic surgeon and pride myself for being one. It has been over two decades in the profession, and I would be lying if I said these decades were not fulfilling. Orthopedics is a demanding discipline, requires meticulous attention to technique and an intimate knowledge of not only anatomy, but biomechanics, biomaterials, and a lot of technology. It was not a first choice but one I have not regretted.

So, what am I doing here, talking about career changes, a gear shift so as to say !

There are two ways of interpreting this as a gear shift, a forward gear shift into better territory or a reverse gear shift into unknown territory.

Let us see how this happened. I was always clear that I will explore opportunities if they present themselves and I was prepared to accept them. This was not a decision of desperation but a calculated decision that took many years to execute. The first exploration happened when I had passed out of orthopedics, I was not ready for a sales fronting job and with God's grace I declined it. Ten years later I was lecturer in Mumbai and was planning a move out of Mumbai. I had already explored areas that promoted my strengths by dabbling in Medical Writing with Pharma majors. It was but natural that I should look at the publishing industry as well as the Pharma industry. Critical look at my career as it stood then and my desires as to where it should be, led me to decide to hold on and continue with Orthopedics and I eventually landed up in South India in a premier institution that gave me career satisfaction which was exemplary. I got hands on experience in administrative work and quality and safety domains which helped me get ideas as to where my next career choice would lie. Keeping this in mind, I pursued and subsequently completed a post graduate diploma in management and healthcare administration by distance mode. I was introduced to the principles of management and how it could be applied to practice and to life. This really broadened my outlook. I was also fortunate to be able to expand my horizons by gradually taking on more responsibility at the Indian Journal of Orthopedics and participating in their events. Yet, I was looking at medical administration as a possible future choice as much as it did not appeal to me. As a surgeon, one prefers to be in the thick of things. As it happened, fate brought me back to maximum city and I was able to think once again if I wanted to change my career or start practice. Academically I was satisfied with my career goals having reached Professorship. Once again, my choices lay between the publication industry and the pharma industry. I faced another hurdle; I was too senior, and I was finding it difficult to find a suitable placement with reasonable renumeration. The more senior one gets, the more difficult it gets to shift gears in the right direction. I had the qualifications and the wide experience but was unable to find the right placement. I explored clinical research organizations, pharma consulting, publication industries and what not. Lady luck smiled on me, and my CV found its' way to Tata Consultancy services through my friends, and I found myself working in a position uniquely suited to my abilities. I joined the medical devices vertical in life sciences engineering of the prestigious firm Tata Consultancy Services six months later. The job not only involved medical device development but also research and innovation in one of India's largest companies and working with some of the world's best researchers and engineers. This opened new horizons for me and newer career enhancements, leveraging my complete spectrum of experience and knowledge. It has been nearly three and a half years and I am going strong. Did I catch a lucky break? I would say yes. I would also say I had been preparing for this change over time. Gathering knowledge, different strengths and capabilities and a variety of experience, all of which served me well.

Being on the other side, where devices are developed, needs deep contextual knowledge of the clinical domain and technology, and comes with its own set of challenges. The language one speaks as a clinician needs to be toned down for researchers and engineers. One also needs to gain knowledge of certain areas which are essential to one's functioning. Some examples would be deeper knowledge of the function of medical devices as well as the development process of medical devices, intellectual property, and regulatory aspects of these devices. Some rudimentary knowledge of software helps and enhances once understanding of conversations. Gaining further knowledge is completely fueled by one's own desires to comply and keep up with the job. I certainly am much better informed about the engineering aspects than I was some years ago. In short, it was a splendid decision to join Tata Consultancy Services, and it has been completely fulfilling and challenging, to my satisfaction.

Do I miss clinical orthopedics, I certainly do and besides doing actual clinical work, I am completely abreast of developments in the field. Reading journals and attending orthopedic meetings is something that has not changed. It is also essential for me to do this to do my job well. I certainly miss teaching my postgraduate students and undergraduate students. I would hopefully get back to that soon,

Now, what's the message I must give? Should I say you should look for a career shift? I would be wrong in saying so. It is also wrong to say once an orthopedic surgeon, always an orthopedic surgeon. One must seek challenges in life, and with challenges one must be ready to accept change. One could explore an alternative career as a part time option or a full-time option. To do this, you need to evaluate your own strengths and skills, it may communication or management or writing, you need to list them out and build on them. The process of change needs to be planned and managed and most important, do have a fallback option if you fail. This may not always be possible but is a desirable. Create a CV that panders to your strengths and emphasizes your abilities. Create a statement or vision as to where you would like from a career. Then send it to friends and peers who work in alternative industries where you see yourself fitting in. And one quality you certainly need, a lot of patience to get the right fit, it may take days, months, years. Do not lose heart. The answer may lie in you launching your own firm too. The answer to that lies within you, your understanding of your own skills and qualities and your presentation of the same before yourselves and the industry.

Lastly, start early with a long-term plan. Where there is a will, there is surely a way, and a path opens in the right direction.

All the best.

This article along with others can be found on my blog "Nuts and Bolts" https://www.drmuralipoduval.wordpress.com

1. Clayton M Christensen : " How will you measure your life" ; https://hbr.org/2010/07/how-will-you-measure-your-life

Intermittent Fasting – How To Go About It?

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Intermittent fasting is a term used to describe a variety of eating patterns in which no or few calories are consumed for time periods ranging from 12 hours to several days. The first 12 hours after food consumption is referred to as postabsorptive state and is an anabolic state mediated by insulin. After 12 hours of no food intake the liver glycogen is exhausted and the body goes into a phase of negative energy balance which leads to a metabolic switch with mobilization of fatty acids for fuel. Emerging evidence suggests that this metabolic switch from glucose to fatty acid derived ketones represents an evolutionary trigger point which serves to preserve muscle mass by shifting metabolism from fat storage to fat mobilization. Modern carbohydrate centric diets and consumption of multiple small meals prevents this metabolic switch from being deployed and has resulted in obesity pandemic and associated metabolic adverse health issues.

IF can help in fat loss, improved metabolic health, and potentially even extend life span. Fasting for about 18 hours activates a phenomenon called autophagy which helps the body to use damaged cells and organelles for fuel and this can theoretically reduce risk of cancers.

Several methods of this eating pattern exist.

Here are 6 popular ways to do intermittent fasting.

1. The 16/8 method – Lean gains

The 16/8 method involves fasting every day for about 16 hours and restricting your daily eating window to approximately 8 hours. This is also known as time restricted eating. Within the eating window, one can fit in two, three, or more meals.

This can be done by eating an early dinner and skipping breakfast. For example, if you finish your last meal at 7 p.m. and don't eat until 11 the next day, you're technically fasting for 16 hours. Breakfast is not what we eat first thing in the morning, it refers to the meal after at least 12 hours of no food.

You can drink water, black coffee, and other zero-calorie beverages during the fast, which can help reduce feelings of hunger.

It's very important to primarily eat healthy foods during your eating window. This method won't work if you eat lots of processed foods or an excessive number of calories.

2. The 5:2 diet – Fast Diet

The 5:2 diet involves eating as per normal patterns 5 days of the week and restricting calorie intake to 500–600 for 2 days of the week.

On the fasting days, it's recommended that women eat 500 calories and men eat 600.

3. Eat Stop Eat

Eat Stop Eat involves a 24-hour fast once or twice per week.

Fasting from dinner one day to dinner the next day amounts to a full 24-hour fast.

For example, if you finish dinner at 7 p.m. Monday and don't eat until dinner at 7 p.m. Tuesday, you've completed a full 24-hour fast. You can also fast from breakfast to breakfast or lunch to lunch-the end result is the same.

Water, coffee, and other zero-calorie beverages are allowed during the fast, but no solid foods are permitted.

During eating periods nutritional requirements must be prioritized.

The potential downside of this method is that a full 24-hour fast may be fairly difficult for many people.

4. Alternate-day fasting

In alternate-day fasting, you fast about every other day.

There are several different versions of this method. Some of them allow about 500 calories during the fasting days.A full fast every other day can be difficult to do especially for the beginners.

5. The Warrior Diet

The Warrior Dietinvolves 20 hours fast and 4 hours eating window.This diet's food choices are quite similar to those of the paleo diet — mostly whole, unprocessed foods.

6. Spontaneous meal skipping

You don't need to follow a structured intermittent fasting plan to reap some of its benefits. Another option is to simply skip meals from time to time, such as when you don't feel hungry or are too busy to cook and eat. So, if you're really not hungry one day, skip breakfast and just eat a healthy lunch and dinner.

Skipping one or two meals when you feel inclined to do so is basically a spontaneous intermittent fast.

Just make sure to eat healthy, balanced meals during the non-fasting periods.

The bottom line

Intermittent fasting is a weight loss tool that lowers the fasting insulin levels and improves insulin sensitivity. This allows fat loss and at the same time maintains muscle health.

Health & Fitness : A New Life Style

Dr. Sanjeev Jain, *Mumbai*

Living a healthy lifestyle is all about forming healthy habits. One of the most difficult things about committing to a healthy lifestyle is trying to change too many things at once. One of the biggest challenges that medical professional face is staying healthy in our ever changing fast paced lives. While we work in a field that promotes health and wellness for our patients, given the demands and responsibilities in our own lives, it is often difficult to focus on our own health. In our increasingly busy lives, the demand of balancing social, academic and work obligations takes away from the time invested into ourselves.

As we all know that most of the orthopaedic surgeons are active on an average till the age of 70 years as it's amazing to know that most of us want to enjoy a good professional life. So it is utmost of important that we take care of ourself and be healthy & fit always. Health & fitness has a totally different definitions & but they move hand to hand together. As we know that health is state of complete physical, mental & social well-being and not merely the absence of disease or infirmity.

I have learned through my journey that the foundation of living a healthy and balanced life is prioritizing your time and creating non-negotiable habits that shape the framework of your day. Here are some tips that we can use to make our health non-negotiable.

1. Make our mornings peaceful : I find that creating a morning routine helps to set the intention for the day. If our mornings are hurried and rushed, we often feel more stressed throughout the day.

2. Change one thing a day until it becomes a habit like eat at least one salad a day with a meal of your choosing, Once it does, choose a new thing.

3. Build healthy habits like eat vegetables at every meal and always keep healthy high protein stacks on hand

4. Invest in your health like that even 10 minutes of an at home exercise circuit is better than nothing at all.

Exercise can make us a better doctor as a doctor who is mentally alert, energetic, and maintains a healthy weight inspires a certain degree of confidence and patients are more likely to listen. Our body and mind will thank us—and so will our patients. Practicing self-care, which is often overlooked by physicians themselves, is the first step. With this in mind, let's take a closer look at different types of physical activity that can improve our health and fitness, as well as boost our productivity in clinical practice. We all know that physical activity is imperative for maintaining a healthy lifestyle over the long term. For a boost in productivity, researchers have shown that low-intensity workouts—including cycling, yoga, golf, dancing, and walking—may offer the greatest effects.

Health and fitness benefits -

1. In addition to boosting productivity, regular physical activity has a host of other health benefits, including improved sleep quality, stress management, cardio protection, and immune protection.

2. Improved sleep - Moderate aerobic exercise can help us fall asleep quicker and increase the amount of deep sleep we get, during which time the brain and body go into recovery mode.

3. Reduced stress - Exercise reduces stress by stimulating the production of endorphins, the body's natural painkillers and mood elevators that are responsible for the "runner's high" and feelings of relaxation. Virtually any type of exercise can induce stress relief, though physical activity involving muscular meditation—using large muscle groups in rhythmic, repetitive actions—may work best.

4. Heart health - Physical activity is one of the most effective tools of cardio protection—it can strengthen our heart muscle, regulate our weight, and circumvent artery damage from high cholesterol, high blood sugar, and high blood pressure levels that can lead to a fatal heart attack or stroke. Aerobic exercise promotes greater blood circulation throughout the body, which can lower our blood pressure levels and heart rate. For those with a high body fat percentage looking to improve their cardiovascular health, then resistance or strength training may be the best bet.

5. Immune system support - Regular exercise can improve our overall fitness, which helps our immune system perform at its optimal level. Some researchers have even shown that moderate-intensity exercise and meditation may help reduce the number of colds and respiratory infections we get and some researchers found that yoga may support the immune system by reducing the effects of chronic inflammation.

I suggest that being fit should be a priority to all of us and we all should maintain a fitness routine while trying to keep up with a busy work . Please "make" time, not "find" time. We have to go out of our way to create space in our day for movement and schedule it in just like any other important activity that we cannot miss. There are two very important things that need to be addressed in order to help us to create the right mindset. Mindset is everything when it comes to healthy eating and physical fitness and all of the tips in the world will not be helpful if we are not clear on these two very important things.

I wish all of you a good luck and happy start for our health and fitness.

Maintaining Health And Fitness In 2021

Dr. Rajeev K Sharma, *New Delhi*

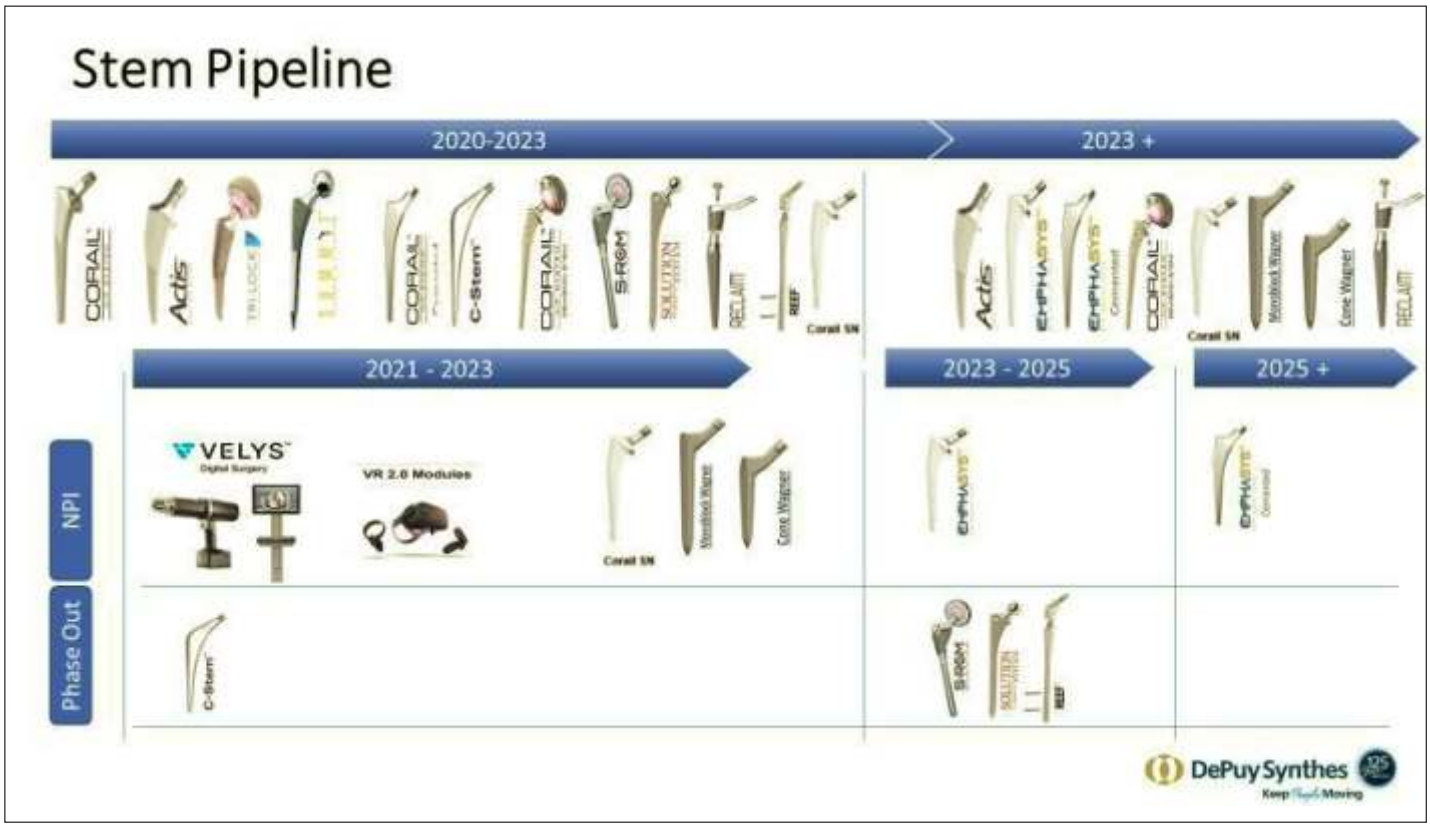
2020 has gone in isolation for majority of its time. World has embraced isolation and staying at home was oddly acceptable. Covid – 19 has changed life for people across the globe. It has left an indelible mark on every aspect of our lives. In terms of health and fitness, the focus has shifted from 'staying in shape' to 'staying Covid free'. Lack of activity coupled with unrestrained access to food has imminently added inches to our waist lines. Those of us who are genetically not as blessed are facing the brunt of it. Talking about fitness is most relevant today.

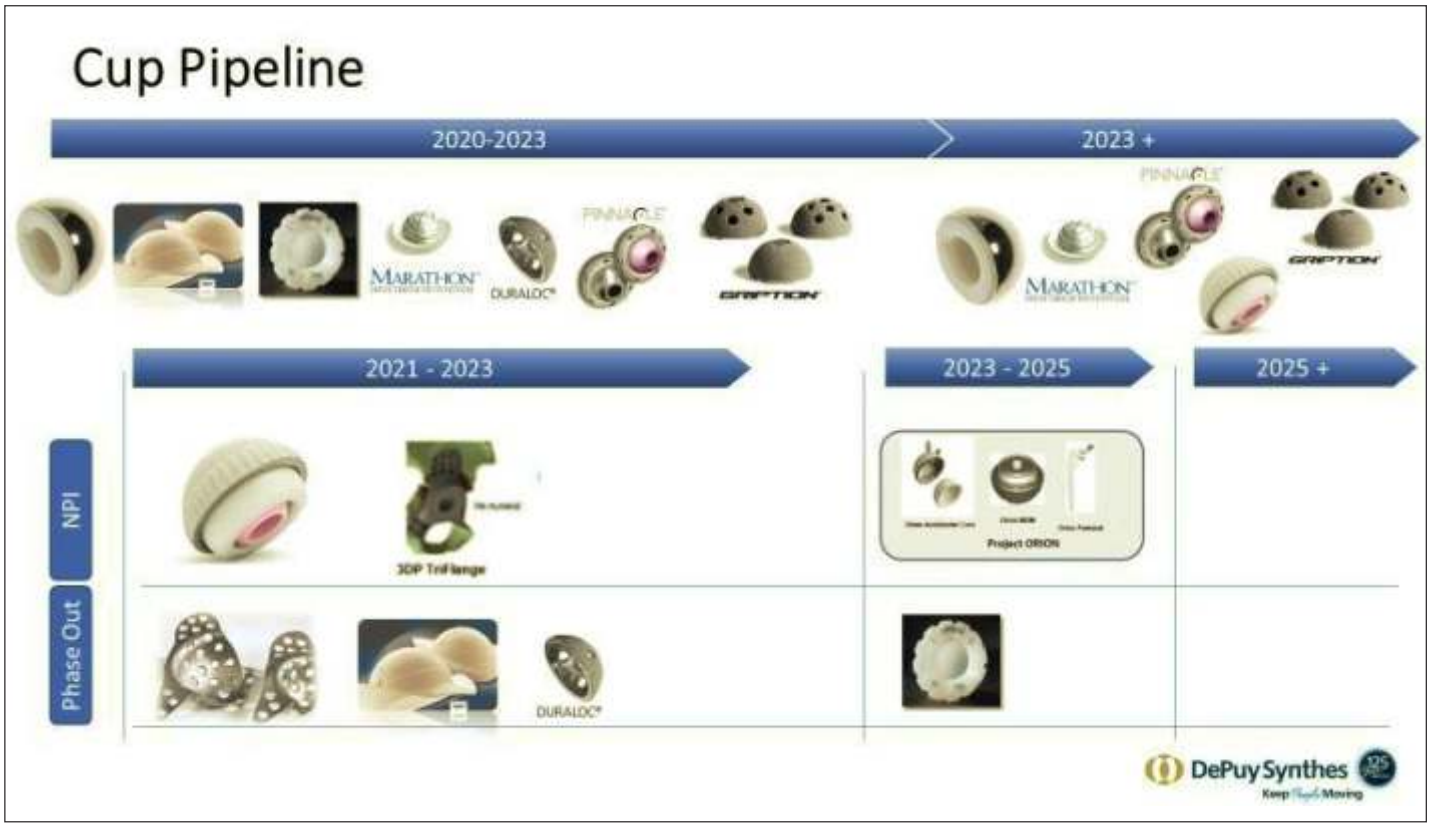
Some of the things that I find useful are:

1. Maintaining a regularity of the day. Having a fixed wake up and sleep time, fixed meal times, and a sense of routine during the day, go a long way in ensuring better physical and mental health. Many of the youngsters may not agree with me, but I find waking up early adds to the productivity in life.
2. Exercise daily, preferably twice a day. While going to the gym works for some, others may try yoga at home. Simple yogic exercises like Surya Namaskar, with stress on appropriate breathing technique, are immensely rejuvenating both physically and mentally. Try virtual classes if needed. Long walks, jogging, weight lifting, and so on, whatever works for you… Try bodyweight exercises such as 10-20 push-ups, lunges, planks and hip extensions.
3. Yoga and meditation is helpful in keeping us calm, cool and comfortable.
4. Many of us have reacquainted with our families during the lockdown. Let's keep those connections alive. Joke, laugh a bit, share stories…spend quality time together.
5. Drink sufficient fluid during the day, preferably water. Avoid aerated drinks. Eating a fruit or vegetables is better than drinking it…. Stay hydrated.
6. It is important to have balanced meals – a right mix of carbs, proteins, vitamins, minerals, and fats. Most of our traditional meal choices incorporated ingredients from all food groups. We can look back for inspiration and modify it to suit our present day requirements.
7. CURB unhealthy carbs & fried food. Shunning all carbs may not be desirable. All carbs are not bad. In fact they are important source of energy. However we must make complex carbohydrates part of our plate instead of simple ones.
8. If you consume junk food, like chips - don't start eating from a packet… use a plate… see at least what and how much you are eating
9. Lean proteins are the way to go. Smart lean protein sources are high in essential amino acids but low in fat and calories. There are ample vegetarian and nonvegetarian lean proteins for e.g. fish, eggs, low fat dairy, beans, peas, and lentils.
10. Not all fats are bad. Mono unsaturated and polyunsaturated are good for heart, brain and overall health. Some of the super healthy high fats food are – avocado, cheese, eggs, fatty fish, nuts and seeds. Refined fats are undesirable. Cold pressed oils are good to go. Focus needs to be on good quality and moderation in terms of quantity.
11. Eating fresh and seasonal food is always beneficial. It is healthier, tastier, and environment friendly.
12. **Portion control goes a long way in maintaining health and fitness,** it keeps us energetic. Over eating will lead to lethargy and calorie overload. Small frequent meals are helpful.
13. Having enough fiber/ roughage is equally important. It promotes gut health, helps manage weight, provides satiety, and helps in management of cholesterol and blood sugar.
14. A big shout out to the use of millets in our food. Millets are coarse grains that are a repository of protein, fiber, vitamins, minerals, essential fatty acids, phytochemicals, and anti-oxidants. Traditionally used in abundance, we have forgotten their importance lately. These grains are the answer to our nutritional, agrarian, and environmental challenges. Some of the millets that we can use are – Jowar (sorghum), Bajra (pearl millet), Rag (finger millet), Jhangora (barnyard millet), Amaranth etc.
15. Adopt a hobby – gardening, cooking or any other activity that you like.
16. Expose yourself to sunlight at least 15 minutes/day.
17. Keep a measure on your chest and waist ... Inches are as important as Kg... Maintain BMI around 24 and definitely below 30.

18 Sleep well for 6 to 8 hours

"Each day is a chance to get stronger, eat better, live healthier and be the best version of yourself"





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