Primary health care

Capacity building for primary health care (The Hindu: 20180122)

http://www.thehindu.com/opinion/op-ed/capacity-building-for-primary-health-care/article22486460.ece

A pluralistic and integrated medical system remains a solution worth exploring

A contentious element of the National Medical Commission (NMC) Bill 2017 — an attempt to revamp the medical education system in India to ensure an adequate supply of quality medical professionals — has been Section 49, Subsection 4 that proposes a joint sitting of the Commission, the Central Council of Homoeopathy and the Central Council of Indian Medicine. This sitting, referred to in Subsection 1, may “decide on approving specific bridge course that may be introduced for the practitioners of Homoeopathy and of Indian Systems of Medicine to enable them to prescribe such modern medicines at such level as may be prescribed.”
Missing the reality

The debates around this issue have been ranging from writing-off the ability of Ayurveda, yoga and naturopathy, Unani, Siddha and homeopathy (AYUSH) practitioners to cross-practise to highlighting current restrictions on allopathic practitioners from practising higher levels of caregiving. However, these debates miss the reality: which is a primary health system that is struggling with a below-par national physician-patient ratio (0.76 per 1,000 population, amongst the lowest in the world) due to a paucity of MBBS-trained primary-care physicians and the unwillingness of existing MBBS-trained physicians to serve remote/rural populations. Urban-rural disparities in physician availability in the face of an increasing burden of chronic diseases make health care in India both inequitable and expensive.

Therefore, there is an urgent need for a trained cadre to provide accessible primary-care services that cover minor ailments, health promotion services, risk screening for early disease detection and appropriate referral linkages, and ensure that people receive care at a community level when they need it.

Issue of cross-prescription

The issue of AYUSH cross-prescription has been a part of public health and policy discourse for over a decade, with the National Health Policy (NHP) 2017 calling for multi-dimensional mainstreaming of AYUSH physicians. There were 7.7 lakh registered AYUSH practitioners in 2016, according to National Health Profile 2017 data. Their current academic training also includes a conventional biomedical syllabus covering anatomy, physiology, pathology and biochemistry. Efforts to gather evidence on the capacity of licensed and bridge-trained AYUSH physicians to function as primary-care physicians have been under way in diverse field settings, and the call for a structured, capacity-building mechanism is merely the next logical step.

The 4th Common Review Mission Report 2010 of the National Health Mission reports the utilisation of AYUSH physicians as medical officers in primary health centres (PHCs) in Assam, Chhattisgarh, Maharashtra, Madhya Pradesh and Uttarakhand as a human resource rationalisation strategy. In some cases, it was noted that while the supply of AYUSH physicians was high, a lack of appropriate training in allopathic drug dispensation was a deterrent to their utilisation in primary-care settings. Similarly, the 2013 Shailaja Chandra report on the status of Indian medicine and folk healing, commissioned by the Ministry of Health and Family Welfare, noted several instances in States where National Rural Health Mission-recruited AYUSH physicians were the sole care providers in PHCs and called for the appropriate skilling of this cadre to meet the demand for acute and emergency care at the primary level.

Our own experience at the IKP Centre for Technologies in Public Health shows that there is hope. Here, the focus has been on deploying a capacity-building strategy using AYUSH physicians upskilled through a bridge-training programme, and the use of evidence-based protocols, supported by technology, to deliver quality, standardised primary health care to rural populations. Protocols cover minor acute ailments such as fever, upper respiratory tract
infections, gastrointestinal conditions (diarrhoea, acidity), urological conditions, as well as proactive risk-screening. The Maharashtra government has led the way in implementing bridge training for capacity-building of licensed homoeopathy practitioners to cross-prescribe.

As anchors

Capacity-building of licensed AYUSH practitioners through bridge training to meet India’s primary care needs is only one of the multi-pronged efforts required to meet the objective of achieving universal health coverage set out in NHP 2017. Current capacity-building efforts include other non-MBBS personnel such as nurses, auxiliary nurse midwives and rural medical assistants, thereby creating a cadre of mid-level service providers as anchors for the provision of comprehensive primary-care services at the proposed health and wellness centres. Further, the existing practice of using AYUSH physicians as medical officers in guideline-based national health programmes, a location-specific availability of this cadre to ensure uninterrupted care provision in certain resource-limited settings, as well as their current academic training that has primed them for cross-disciplinary learning hold promise. These provide a sufficient basis to explore the proposal of bridging their training to “enable them to prescribe such modern medicines at such level as may be prescribed”.

Ensuing discussions will be well served to focus on substantive aspects of this solution: design and scope of the programme, implementation, monitoring and audit mechanisms, technology support, and the legal and regulatory framework. In the long run, a pluralistic and integrated medical system for India remains a solution worth exploring for both effective primary-care delivery and prevention of chronic and infectious diseases.

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**Diabetes**

**Make informed and intelligent life choices to keep diabetes at bay’ (The Hindu: 20180122)**

One needs individualised dietary counselling for balanced diets and must maintain normal body weight from early age, says doctor

Diabetes with Delight, a comprehensive manual on the metabolic disorder written by Dr. Anoop Misra, chairman of Fortis C-Doc, was launched at the World Book Fair 2018 at Pragati Maidan. Speaking to The Hindu about diabetes and its management, Dr. Misra says his new book is an “educative guide that teaches readers about how diabetes can affect mental, emotional and physical well being but can be prevented or managed through some simple, methodical steps”

What is the magnitude of diabetes problem in India, more specifically in Delhi?

Currently, 82 million people in India are affected due to diabetes and the number is expected to rise to 151 million by 2045. In a 2015 study, it was estimated that around a quarter of Delhi’s population suffers from some form of diabetes and around 48% from pre-diabetes (impaired glucose tolerance).

What does your book talk about?

Before this book, patients obtained knowledge and education about diabetes from physicians and the Internet. Physicians do not have enough time to educate patients and the Internet often provides confusing and wrong information.

Further, most of this information is derived from sources in the United States and the United Kingdom, which is often not applicable to Indian patients. An India-specific information source for management of diabetes was needed and is provided by this book. Diet, exercise and management techniques in the book are tailored towards Indian patients, based on research done by our and other groups in India.

How is it helpful for the common man?

Besides giving comprehensive information about diabetes, the book also informs readers about solutions to common problems that patients face. For example, what to do in case a patient develops nausea, vomiting or fever? What drugs to take when travelling to the hills? What if a diabetic person plays competitive sports? This book answers scores of questions on diabetes and has a list of frequently asked questions for quick reference. The book has photographs and diagrams to better explain exercises or insulin-injection techniques. This book also gives healthy food recipes and a sustainable diet plan. Knowledge about these issues can empower patients and their relatives to manage diabetes. The book is also apt for nutritionists, lifestyle coaches and physicians.
Are there ways to prevent diabetes?

With modest weight loss (around 7-10% of ideal body weight), physical activity (at least 60 minutes a day) and proper diet, onset of diabetes can be prevented or delayed.

For those who are morbidly obese, massive weight loss can reverse diabetes, as has been shown with application of bariatric surgery. Type-2 diabetes is often preventable by simple lifestyle changes. Keep your weight in its ideal range, exercising regularly and eat a balanced diet in small meals with intermittent snacks, which should include whole grains. Avoid sugary drinks and over refined grains.

Choose good fats instead of bad fats. Polyunsaturated fats and monounsaturated fats in olive, canola and mustard oils can help ward off Type-2 diabetes.

Limit intake of red meat and avoid processed meat. Nuts, seeds, beans, masoor dal, lobia, sprouts, tofu, or poultry are much more healthy sources of protein. Also add two servings each of green leafy vegetables and fruits.

What are the rules to help prevent diabetes in children?

Prevention of obesity and Type-2 diabetes in children requires systematic and focused approach involving not only the child, but also the parents and peers. You need individualised dietary counselling for balanced diets and must maintain normal body weight from early age. It is important that children/adolescents be encouraged to include at least 60 minutes of moderate intensity outdoor physical activity/sports daily. Discourage time spent watching TV or playing computer games. Parents should try to set an example by themselves exercising regularly. They should share at least one meal with the children and should accompany them to parks and play with them. Group/community must encourage participation in physical activity. Fitness centres, courts for basketball and badminton, playgrounds for hockey and skating, and parks for jogging and walking should be made more accessible. Regular health check-ups should also be done at least once a year. During this visit, the doctor should calculate the child’s Body Mass Index and counsel parents if it is above the normal range.

What is the proportion of women affected by diabetes?

The prevalence of diabetes for women 20-79 years is estimated to be 8.4%, which is slightly lower than among men (9.1%). There are about 17.1 million more men than women with diabetes (221.0 million men against 203.9 million women). Going by the current trend, they will outnumber men in diabetes soon. There are a number of factors responsible for this. Many studies show that girls in India are getting obese and show more metabolic syndrome — clustering of risk factors such as high sugar, blood pressure, deranged lipids — as compared to males. Other factors include weight gain after pregnancy, post-menopausal hormonal changes, as well as social and security issues that prevent them from engaging in outdoor activities and exercises.

What are the essential tips to manage diabetes?
Making patients understand the importance of correct diet and exercise throughout their life. Enhancing awareness about the importance of scientific treatment and its compliance, which can prevent complications, disability and death. Providing good education to prevent long-term diabetes complications. Regular physical examination and check ups to detect early damage. Maintain positive outlook even if disease is complicated. Maintain disciplined lifestyle.

**New eczema therapy**

New eczema therapy reduces asthma severity in kids (The Tribune: 20180122)


Insights for a possible new therapy for eczema that also reduces the severity of asthma in children.

The findings, published in the Journal of Investigative Dermatology, are an important next step in understanding the relationship between the two inflammatory diseases and to developing effective therapies.

Children with atopic dermatitis (AD), a type of eczema of the skin, show an increased risk of developing asthma later in life.

House dust mites are known culprits in the development of both AD and asthma, as exposure to the mites induces inflammation.

The researchers from VIB, the Flanders Institute for Biotechnology in Belgium, created a mouse model to look further into the relationship between the two diseases.

"As predicted, our test showed that house dust mite- induced skin inflammation leads to aggravated levels of allergic airway inflammation," Julie Deckers, from VIB.

"Yet, to our surprise, this response significantly differs from the reaction to direct exposure of house dust mites in the lungs without prior skin inflammation. These results have given us a deeper understanding of the complexity of the atopic march," Deckers said.

The challenge, however, was to investigate whether the relief of skin inflammation might influence the subsequent development of asthma.

The team therefore combined two anti-inflammatory compounds—orticosteroids and PPAR agonists—into one potential treatment in mice.
"The combined therapy effectively alleviated AD, but was insufficient at preventing allergic asthmatic response in the lungs," said Deckers.

"However, the treatment did significantly reduce the severity of the asthma by counteracting one aspect of the specific immune response in the lungs. In this way, the therapy represents a potent remedy against allergic skin inflammation and the aggravation of atopic march," Deckers added. PTI

Flu

Flu may spread just by breathing: study (The Tribune: 20180122)


Washington: We may pass the flu to others just by breathing, according to a study which contradicts the popular belief that people can catch the influenza virus by exposure to droplets from an infected person's coughs or sneezes.

The study provides new evidence for the potential importance of airborne transmission because of the large quantities of infectious virus researchers found in the exhaled breath from people suffering from flu.

"We found that flu cases contaminated the air around them with infectious virus just by breathing, without coughing or sneezing," said Donald Milton, from the University of Maryland in the US.

"People with flu generate infectious aerosols (tiny droplets that stay suspended in the air for a long time) even when they are not coughing, and especially during the first days of illness. So when someone is coming down with influenza, they should go home and not remain in the workplace and infect others," said Milton, lead researcher of the study.

The researchers characterised influenza virus in exhaled breath from 142 confirmed cases of people with influenza during natural breathing, prompted speech, spontaneous coughing, and sneezing, and assessed the infectivity of naturally occurring influenza aerosols.

For the study published in the journal Proceedings of the National Academy of Sciences, the participants provided 218 nasopharyngeal swabs and 218 half-an-hour samples of exhaled breath, spontaneous coughing, and sneezing on the first, second, and third days after the onset of symptoms.

The analysis of the infectious virus recovered from these samples showed that a significant number of flu patients routinely shed infectious virus, not merely detectable RNA, into aerosol particles small enough to present a risk for airborne transmission.
Surprisingly, 11 (48 per cent) of the 23 fine aerosol samples acquired in the absence of coughing had detectable viral RNA and eight of these 11 contained infectious virus, suggesting that coughing was not necessary for infectious aerosol generation in the fine aerosol droplets.

In addition, the few sneezes observed were not associated with greater viral RNA copy numbers in either coarse or fine aerosols, suggesting that sneezing does not make an important contribution to influenza virus shedding in aerosols.

"The study findings suggest that keeping surfaces clean washing our hands all the time, and avoiding people who are coughing does not provide complete protection from getting the flu," said Sheryl Ehrman, from San Jose State University in the US.

"Staying home and out of public spaces could make a difference in the spread of the influenza virus," Ehrman said. — PTI.

**Fruit juice**

**100 per cent fruit juice may not up diabetes risk: study (The Tribune: 20180122)**


Drinking 100 per cent fruit juice may not increase the risk of developing type 2 diabetes, according to a study.

The research published in the Journal of Nutritional Science found that one hundred per cent juice does not have a significant effect on fasting blood glucose, fasting blood insulin, or insulin resistance.

The findings are consistent with previous research indicating that 100 per cent fruit juice is not associated with an increased risk of developing type 2 diabetes and support a growing body of evidence that it has no significant effect on glycemic control.

A comprehensive data analysis by researchers at Centre for Chemical Regulation and Food Safety in the US quantitatively assessed the relationship between drinking 100 per cent juice and blood glucose control.

Using fasting blood glucose and fasting blood insulin levels as biomarkers for diabetes risk, the systematic review and meta-analysis included 18 randomised controlled trials (RCT) to evaluate the impact of 100 per cent juice from fruits, such as apple, berry, citrus, grape, and pomegranate.
Type 2 diabetes is a metabolic disorder where the body is unable to respond to insulin.

The first line of defence for preventing and treating type 2 diabetes is following a healthy lifestyle. Eating right, exercising regularly and staying at a healthy weight are encouraged.

Dietary guidelines recommend consumption of a healthy eating pattern which includes fruits, vegetables, grains, low-fat or fat-free dairy and a variety of protein foods.

A nearly 120 millilitre glass of 100 per cent juice counts as one serving (half cup) of fruit, and can complement whole fruit to help individuals add more produce to their diets, researchers said. PTI

**Drug ingredients**

26% dip in drug ingredient import from China ((The Tribune: 20180122)

https://epaper.timesgroup.com/Olive/ODN/TimesOfIndia/#

Bengaluru: India’s efforts to reduce reliance on China for drug ingredients are slowly showing results, but concerns of over-dependence on it — pointed out by national security advisor Ajit Doval — still remain.

In 2017, India imported 354 Active Pharmaceutical Ingredients (APIs) from China, a 26% dip compared to 447 in 2015, largely achieved because the number of countries India imported such material from increased from 44 in 2015 to 58 in 2016 and 59 in 2017.

The number of APIs imported from China has grown slightly compared to 2016 (316) though. Also, import from China is still the highest in this category, accounting for 66% of all imports in 2017 — Rs 12,254.97 crore of the Rs 18,372.54 crore. The trend has remained similar in all the three years.

Many of these APIs go into 12 essential drugs listed by India — paracetamol, metformin, ranitidine, amoxicillin, ciprofloxacin, cefixime, acetylsalicylic acid, ascorbic acid, ofloxacin, ibuprofen, metronidazole and ampicillin — and 8 of which are also on WHO’s Model List of Essential Medicines

Officials from the Department of Pharmaceuticals (DoP) and industry experts point out that the import of APIs is because of economic considerations, but experts also pointed out the issue of quality that comes with such over-dependence.

Earlier this month, India banned import of APIs from six Chinese firms claiming they did not meet the required quality standard
Drugs Controller General of India Dr GN Singh said: “Our mandate is limited. We are concerned about the quality of imports and are always keeping a track of it. The ban on those firms is routine and should not been seen as targeting the Chinese companies.”

He said that India is also manufacturing APIs and there are more than 500 products, but most of them are being exported. Indian Pharmaceutical Association president Dr Rao VSV Valdlamudi said drug prices in the domestic market are controlled and while the APIs being exported command the price their quality demands, they do not fetch the same price domestically.

“The problem of over-dependence, however, is a much larger issue. If China stops importing from India, will India be able to turn all its exports to the domestic market? Over-dependence has to reduce. At present the government doesn’t take into consideration many variables and overheads in production and subsidies, as some argue, is not a longterm solution,” Rao said.

India has been putting in place some systems, but chemicals and fertilisers minister HN Ananth Kumar, while blaming legacy, concedes the Centre is not fully happy with the progress.

“Historically, there has been too much dependence on China and previous governments have done nothing about it. We took a twopronged approach.

First, from 0% customs duty on import of APIs from China, we made it 7.5% which is very good for domestic API makers. As per the Dr Katoch Committee report, we initiated having bulk drug parks and the first will come up near Hyderabad,” he said.

He said the Centre will provide up to Rs 500 crore for common facilities like power, water, effluent treatment, testing and trading facilities at such parks, which will reduce production cost by 30% making it globally competent, even compared to China.

**Light pollution**

Light pollution is killing migrating birds (The Tribune: 20180122)

[https://epaper.timesgroup.com/Olive/ODN/TimesOfIndia/#](https://epaper.timesgroup.com/Olive/ODN/TimesOfIndia/#)

Washington: Scores of migrating birds are being lured by artificial light pollution into urban areas which may prove to be deadly ecological traps, a study has found.

Researchers at University of Delaware in the US used 16 weather surveillance radars from US over a seven-year period to map the distributions of migratory birds during their fall stopovers. Since most of the birds that migrate in the US are nocturnal and leave their stopover sites at night, researchers took snapshots of the birds as they departed.
“Shortly after sunset, at around civil twilight, they all take off in these well-synchronised flights that show up as a sudden bloom of reflectivity on the radar,” said Jeff Buler, from University of Delaware. “We think artificial light might be a mechanism of attraction because we know at a very small scale, birds are attracted to light.” One hazard for birds attracted to city lights is death from flying into high buildings. PTI

Prebiotics infant formula

Prebiotics in infant formula may boost learning, memory (The Tribune: 20180122)


Adding prebiotics to infant formula can help enhance memory and exploratory behaviour in babies, scientists have found.

New mothers are always encouraged to offer breast milk to newborns. Among other things, breast milk contains natural sources of prebiotics: small, indigestible fibre molecules that promote the growth of good bacteria in the baby's gut.

Yet for many families, breastfeeding is difficult or impossible.
"When we provide prebiotics in formula, our results confirm that we can not only benefit gut health, which is known, but we can also influence brain development," said Ryan Dilger, associate professor at University of Illinois in the US.

"We can actually change the way piglets learn and remember by influencing bacteria in the colon," said Dilger.

Piglets are widely considered a more informative model for human infants than mice and rats; their digestive systems, behavioural responses, and brain development are remarkably similar to human infants.

Therefore, researchers are increasingly turning to piglets to test hypotheses in pre-clinical trials related to human health, especially in the context of gut microbes and brain development.

"There hasn't been a lot of work looking at the gut-brain axis in humans, but a lot of rodent work is showing those connections," said Stephen Fleming, doctoral student at University of Illinois.

"This is taking it to an animal model that is a lot closer to human infants and asking if that connection still exists and if we can tease out possible mechanisms," said Fleming.

Researchers had earlier worked with piglets to show that a combination of innovative formula components, including prebiotics, may play a role in brain development and behaviour.

In the new study, the team concentrated solely on the effects of prebiotics.

Starting on the second day of life, piglets were given a cow's milk-based infant formula supplemented with polydextrose (PDX), a synthetic carbohydrate with prebiotic activity, and galactooligosaccharide (GOS), a naturally occurring prebiotic.

When the piglets were 25 days old, Fleming took them through several learning, memory, and stress tests. After 33 days, blood, brain, and intestinal tissues were collected for analysis.

The test for learning and memory gave piglets a chance to play with dog toys - one they had seen before and one brand-new toy.

If they spent more time with the new toy, that was an indication that the piglet recognised it as new and preferred it.

Pigs fed PDX and GOS spent more time playing with new objects than pigs who did not receive the prebiotic supplements.

The preference for novel objects, an indication of natural curiosity, is a sign of healthy brain development and points towards positive development of learning and memory. — PTI
Smallpox Vaccine (The Asian Age: 20180122)

Synthetic virus may lead to smallpox vaccine

Toronto, Jan. 21: Scientists have created a synthetic horsepox virus that could lead to the development of a more effective vaccine against smallpox.

The discovery demonstrates how techniques based on the use of synthetic DNA can be used to advance public health measures.

Researchers from the University of Alberta in Canada produced an infectious horsepox virus, which they synthetically reconstructed using a published genome sequence and DNA fragments manufactured entirely by chemical methods.

The team went on to show that the synthetic horsepox virus could provide vaccine protection in a mouse model of poxvirus infection.

"This application of synthetic DNA technology has the potential to revolutionise how we manufacture complex biologicals including recombinant viruses," said David Evans, professor at University of Alberta.

"These methods advance the capacity to produce next-generation vaccines and offer concern to public health agencies. Current smallpox vaccines are used to protect first responders and military service members but are rarely used except in special circumstances.

Due to the toxicity of most modern smallpox vaccines, Canada and the US have long discontinued immunising whole populations, as was the policy prior to smallpox eradication.

Researchers had previously used more traditional recombinant DNA technologies to engineer a vaccinia virus with the aim of improving the treatment for bladder cancer.

The virus is an oncolytic virus, which means it was modified to selectively kill rapidly-dividing cancer cells.
New AI System (The Asian Age: 20180122)

New AI system can negotiate deals better than humans

Boston, Jan. 21: Scientists have created a new artificial intelligence system that can negotiate a compromise and maintain relationships more effectively than humans.

Researchers programmed machines with an algorithm called S# and ran them through a variety of two-player games to see how well they would cooperate in certain relationships.

The team from Brigham Young University and Massachusetts Institute of Technology in the US tested machine-machine, human-machine and human-human interactions.

In most instances, machines programmed with S# outperformed humans in finding compromises that benefit both parties.

“The end goal is that we understand the mathematics behind cooperation with people and what attributes artificial intelligence (AI) needs to develop social skills,” said Jacob Crandall from BYU.

“AI needs to be able to respond to us and articulate what it’s doing. It has

coding them with a range of “cheap talk” phrases.

In tests, if human participants cooperated with the machine, the machine might respond with a “Sweet. We are getting rich!” or “I accept your last proposal.”

If the participants tried to betray the machine or back out of a deal with them, they might be met with a trash-talking “Curse you!” “You will pay for that!” or even an “In your face!”

Regardless of the game or pairing, cheap talk doubled the amount of cooperation. When machines used cheap talk, their human counterparts were often unable to tell whether they were play-
मीट, उच्च कैलोरी वाले पेय पदार्थों से आंत के औंसर का खतरा

शोध अनुसंधान

क्या आप मीट, परिस्कृत अनाज और उच्च कैलोरी के पेय पदार्थों का ज्यादा सेवन करते हैं? अगर ऐसा है तो सावधान हो जाएं। नए अध्ययन में आगाम किया गया है कि इस तरह के आहार से आंत के औंसर का खतरा बढ़ सकता है। अमेरिका के हार्वर्ड टीएच पैट्रिक हैल्ड के शोधकर्ताओं ने कहा कि सूजन का कारण बनने वाले इस तरह के आहार का संबंध पूर्वोर्त और महिलाओं में कैलोरियनर के बढ़ते खर्च से है। इसलिए अब ज्यादा खर्च मोटापे से पीड़ित लोगों में पाया गया।

कैलोरियनर के बाद मात्र क्रिया केवल फलक का एक केम्फ है और इस गेंद में सूजन की अहम भूमिका होती है। इस तरह के आहार से शरीर में सूजन बढ़ सकती है, इसलिए आहार में बदलाव कर कैलोरियनर के बाद जा सकता है। यह निश्चित 1.21 लाख पूर्वोर्त और महिलाओं पर 26 वर्ष तक चिंता गए अध्ययन के आधार पर निकला गया है।

कृत्रिम वायरस से बनेगी चेहरे की भवानी वैक्सीन

वैक्सीनों के कृत्रिम हार्मोनल वायरस बनाने में सफलता पाई है। इससे चेहरे को पहले से कहीं ज्यादा प्रभावी वैक्सीन बनाने में मदद मिल सकती है। इस खोज से यह जाहिर होता है कि तकनीक आगारित कृत्रिम डीएनए का उपयोग जन स्वास्थ्य के उपयोगों को और सुरक्षा बनाने में हो सकता है।

कनाडा की अर्जुन यूनिभर्सिटी के शोधकर्ताओं ने जोने एंड डीएनए में समायोजन विधियों द्वारा बदलाव कर एक संभावित हार्मोनल वायरस की कृत्रिम रूप से डीवाइड तैयार कर दिया। उन्होंने यह पूर्वोर्त फर निकल गए परीक्षण में यह दिखाया कि कृत्रिम हार्मोनल वायरस से वैक्सीन मुख्य तैयार की जा सकती है। अर्जुन डीएनए के प्रोफेसर डॉ. एंड्रू इवर्न ने कहा कि हम जिस तरह वायरसों का पुनः संयोजन करते हैं उसमें कर कृत्रिम डीएनए तकनीक बढ़ा सकता है जो टेस्ट और वैक्सीन में बनाई जा सकती है।
शौपू, साबुन-क्रीम से बांझपन का खतरा

कोल्जिटिक के रसायन से दिक्कत आती है...

शोकक्रियाओं का दावा है कि जबहार उदारित क्रोमेटिक उपयोग लेने के लिए नेल्यालिश, फेक्टॉर्स क्रीम, साबुन, शौपू और पाप्स में खतरनाक कीमियोक्रिया होती है जिससे महिलाओं में बांझपन की समस्या आ सकती है। दिल्ली के इंस्टीट्यूट ऑफ ब्रेय इंजिनियरिंग द्वारा असम्भव कीमियोक्रिया मुद्दे पर विद्वानों ने जानकारी दी है, ‘कोल्जिटिक’ में भी न्यूनतम पाए गए हैं जिससे महिलाओं के एल्कोहॉलिक रिसर्च को प्रभावित करते हैं। इससे महिलाओं के अभाव में दिक्कत आती है, महसूल का खतरा रहता है और बांझपन की दिक्कत हो जाती है।

नेल्यालिश भी है खतरनाक खाद्य में सामने आया है कि नेल्यालिश में ‘पीप्पल्सड्रोयड’ हॉपलिटी और ‘टोल्यून’ जैसे कंपोजिट में कंपोजिटन रखने के लिए जल्दी चमकता है। नेल्यालिश निर्माता ने गर्दन और महसूल और अल्कोहॉलिक दर्द के लिए दामोदर सिंह ने शिकायत की है।