



Rambam

ISSUE No. 13 | March 2014

on call

WHY MEN AND WOMEN GAIN WEIGHT DIFFERENTLY

We chew the fat so
you don't have to

21st Century Medicine

SLEEP APNEA
and SNORING
push this ROBOT's
buttons

FAQ re IVF

DESPITE MARFAN SYNDROME

This family won't be
defined by its genes



RAMBAM
Health Care Campus
Creating the future of medicine.



Rambam

on call



Dear Friends,

In this, the Bar Mitzvah issue of *Rambam on Call* (Issue 13), I'm delighted to share news of our thriving medical center—and when better to share news with friends than in springtime, the season of renewal?

We've recently appointed a new generation of superb clinician-researchers to leadership positions. Each of these accomplished individuals could have made his or her professional home at any foremost medical center in the world, but they've joined ranks with Rambam because what is happening here in clinical, educational, and research terms is one of the most exciting stories coming out of Israel today.

Of course, much work still awaits us in order to fully realize our vision for Rambam. Our top fundraising priority has become the Ruth Rappaport Children's Hospital. Building this facility has required great resources; we thank Mrs. Ruth Rappaport, her family, and the project's other donors from Israel and abroad. Now we must equip the new pediatric facility with hospital beds, monitoring systems, and other essentials. I turn to each of you personally with a request to join us in this, the home stretch for the new Children's Hospital.

With best wishes for a Passover and springtime of good health and renewal,

PROF. RAFI BEYAR

R. Beyar

Director and CEO
Rambam Health Care Campus



RAMBAM
Health Care Campus

Professor Rafi Beyar
Director & CEO
Rambam Health Care Campus

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Departmental Rounds

Institute of Gastroenterology

Rina Assulin, Head Nurse, Institute of Gastroenterology at Rambam, 51, married + 2



1 What does the institute do?

The institute diagnoses, treats and monitors people with diseases of the gastrointestinal tract and liver. We care for both ambulatory patients and inpatients. The tests and treatment are given under sedation by means of advanced endoscopic equipment, and in many cases, we save the patient from the necessity for surgery. Also, within the framework of outpatient care, we give biological treatment to patients with infectious bowel diseases.

2 What is special about the job of the nurse in the Institute of Gastroenterology?

The nurse takes a training program at whose completion she receives the license to work in partnership with the examining physician. By the way, in countries such as England and Sweden, the nurse herself performs endoscopic diagnostic testing.

3 What does your work entail?

As the head nurse, I combine responsibility for staff management and development with work in the examination rooms. More broadly, I work to develop and advance professional standards in Israel and the world.

4 What kind of connection do you have with your patients?

With ambulatory patients, the therapeutic connection is short term but significant. The nurse calms the anxious patient before the examination, and accompanies and supports him during and after the examination. With patients who have such chronic illnesses as Crohn's disease or colitis, and who come to the institute on a regular basis for years, a closer relationship develops. Some of them invite us to significant events in their lives.

5 Of what are you especially proud?

Of the professional level of the institute's staff, of Rambam and the institute's representation on the national and international stage, and especially—of the advanced training that I initiated and organized for hospital and community gastro nurses throughout the country. The course provided nursing assistants with a professional background, an intensive acquaintance with the discipline, and a feeling of personal and professional self-esteem.

6 What are your professional aspirations?

To achieve recognition for gastroenterological nursing as a unique field of expertise within the nursing profession, and to broaden the authority of gastro nurses in Israel.

24/7

in the Pediatric Intensive Care Unit



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08:30 An alarm from the ventilator and monitor of a 2-month-old girl interrupts the morning staff meeting. A nurse hastens to the infant's side and discovers that she's not sufficiently anesthetized, as she must be for her healing, and thus is resisting the device, to which she's been connected for respiratory insufficiency brought on by severe pneumonia. The tiny patient is given additional sedative medication, and calms down.

12:30 A 6-month-old boy is admitted to the unit after having undergone complex cardiac surgery to repair several congenital heart defects. The staff connects him to a ventilator and discovers low blood pressure and other shock symptoms. They hasten to give him intravenous infusions and drugs to improve his heart function, and his condition stabilizes. The infant improves rapidly; the next day, it should be possible to disconnect him from the ventilator in the morning and to transfer him to the Pediatric Department, probably by the evening, in preparation for hospital release.

14:45 A 16-year-old girl is rushed to Rambam following a cardiac arrest that has occurred during a CPR lesson in school. The on-site CPR instructor has performed basic resuscitation, and mobile ICU paramedics have given advanced resuscitation, but on the way to Rambam, the cardiac arrest recurs. Rambam Shock Room and PICU staffers work to revive the girl, and after 15 minutes, her heart starts beating again. She's then admitted to the unit for further treatment.



>>



>>



18:50 A call comes over the public address system: "Bradycardia [ed. note: slow heart rate] in Bed 14." Bed 14 is a simulation station, and its "patient" is a resuscitation mannequin. The attending physician and two nurses rush to the bed and begin resuscitation in accordance with data appearing on the monitor, whose computer has been programmed and activated by Nurse Inbal.


21:30 A 2-year-old girl, with burns on the upper half of her body suffered when she pulled a pot of boiling milk from the stove top, is transferred from Bnai Zion Hospital to Rambam. After examination by a plastic surgeon, she's admitted to the unit for emergency care: multiple intravenous infusions to prevent shock, and treatment with painkillers. Her burns are disinfected and bandaged under local anesthesia by the nursing staff.

03:30 The attending PICU physician is urgently called to the Pediatric Department, where a 3-month-old girl with cancer has developed acute respiratory distress, lost consciousness, and displays decreased heart rate. The physician uses a bellows resuscitator to restore the infant's breathing, identifies the source of the deterioration, and inserts a needle into the tiny patient's chest cavity in order to quickly drain her airway. The infant recovers and is urgently transferred to the unit for further stabilization.

9 Answers to Key Questions About IVF (In Vitro Fertilization)

Eti Dor >> Photography: Jonathan Bloom



A close-up photograph of an in vitro fertilization (IVF) procedure. A metal pipette is positioned over a petri dish containing several small, clear, rectangular microchips, each labeled with a number. The scene is illuminated with a strong blue light, and wisps of white vapor or smoke are rising from the petri dish, creating a dramatic and clinical atmosphere.

A technique used since 1978 to impregnate women who have not succeeded in conceiving naturally. In vitro fertilization.

Get involved

The IVF Unit seeks \$150,000 to purchase an embryoscope for monitoring fertilized eggs.

ROC@rambam.health.gov.il

1 When should medical treatment for infertility be sought?

According to the protocol, a couple should seek medical answers for infertility after they've spent a year unsuccessfully trying to have a child, and should seek personalized treatment in follow-up. Women aged 40 and above, or who have a history of fertility treatments or a known problem (for example, ectopic pregnancy), should seek treatment earlier.

2 Which clinical treatments are provided to infertile women or couples at Rambam Health Care Campus?

As the name indicates, most of the IVF Unit's activities center on providing in vitro fertilization, nicknamed *test tube pregnancy*.

3 What is in vitro fertilization?

This technique has been used since 1978 to impregnate women who have not succeeded in conceiving naturally, in particular when infertility is caused by blocked fallopian tubes. Today, we also use the technique in cases where a couple's infertility is caused by the male partner's low sperm count or when previous fertility treatments (such as artificial insemination) have failed. The treatment includes three phases: In the first phase, we extract mature eggs from the woman. In the next phase, we use the male partner's sperm cells to fertilize the eggs, and "grow" the embryos for 48–72 hours in the laboratory. In the final phase, we implant the embryos in the woman's uterus.

4 How are the eggs extracted from the ovaries?

Egg extraction takes place in the operating room under general anesthesia. Using

ultrasound guidance, the IVF specialist inserts a needle via the patient's vagina directly into each ovary, uses the needle to penetrate those follicles that appear mature, aspirates the eggs out of the ovaries together with the follicular fluid surrounding them, and transfers the extracted fluid and eggs to test tubes that are then sent to the laboratory for microscopic inspection of the eggs' maturity. Ripe eggs lend themselves to being fertilized; the number of eggs retrieved from the woman depends on the follicles' responsiveness to therapeutic drug stimulation.

5 How long does the procedure take?

The procedure takes from 10–20 minutes. The patient's recovery time is quite fast, but because egg extraction is a surgical procedure carried out under anesthesia, we keep the patient under observation for 3–4 hours.

6 How are the eggs fertilized?

There are two methods for fertilizing eggs. Usually, we place the eggs inside IVF culture dishes and add approximately 100,000 sperm cells to each mature egg, based on the premise that one of them will succeed in penetrating and fertilizing the egg. If the male partner lacks sufficient sperm cells or if their quality is inferior, however, chances of achieving fertilization are considerably reduced. In such cases, we use a technique called *micromanipulation*, in which the IVF clinician penetrates each egg with a single sperm cell under the microscope. We keep the IVF culture dishes with the eggs and sperm cells in a specialized IVF incubator, and approximately 18 hours after the sperm cells have been



Dr. Kol and the laboratory staff.

Medical consultants:



Dr. Shahar Kol is the Director of the IVF Unit at Rambam Health Care Campus.



Dr. Elena Milner is the Director of the IVF Laboratory at Rambam Health Care Campus.



Tova Hassin is Head Nurse of the IVF Unit at Rambam Health Care Campus.

added to (or injected into) the eggs, we verify that fertilization has indeed occurred. After another 24 hours has passed, we look to see if a 2–4 cell embryo has resulted. It's possible to implant the embryo in the uterus at this time or, alternatively, to continue to watch the embryo's development and to inject it into the uterus up to 120 hours after fertilization.

7 How are the embryos implanted?


The specialist inserts a fine plastic *cannula* via the woman's cervix into her uterus and then expels and deposits the embryos. We transfer any unused embryos to an IVF embryo freezer; in this way, they can be used for subsequent treatment if the current treatment cycle fails or for the purpose of creating a new pregnancy. When the embryo is 14 days old, we take a blood sample from the woman in order to ascertain the presence of the hormone β hCG (which is secreted by the young placenta). This hormone's presence in the maternal blood indicates that the pregnancy is progressing.

8 What are the chances of becoming pregnant?

The most important predictive factor for IVF success is the woman's chronological age. The younger the woman, the greater the chances of success. Up until 15 years ago, the average age of IVF applicants was 32; today it's 36–37. This steep rise in IVF applicants' average age lessens the chances of success. In the majority of cases, a young patient will become pregnant within the first or second treatment cycle. If the patient is 40 years old or more, however, her chances of successful conception diminish.

9 Do parents who have already had one child through natural conception stand a good chance of successful IVF treatment?

Unequivocally yes. The fact that a couple already has a child demonstrates that his sperm cells and her eggs can create a pregnancy although this depends on the woman's age. The chances of success for a 35-year-old woman who has already given birth are higher than for a 32-year-old woman who has never given birth.



*I must
root out
this
heredity*

declares Moti Schwartz,
who together with two
of his children suffers
from Marfan syndrome.

A family story about
ethical dilemmas and
the attempt to live
a normal life in the
shadow of handicaps

Eti Dor >> Photography:
Jonathan Bloom



Overcoming
the challenges
together: Moti,
Shalev and Reut
Schwartz



Get involved

It will cost \$80,000 to equip the Pediatric Ophthalmology, Strabismus, and Genetics of the Eye Service in the new Ruth Rappaport Children's Hospital.

ROC@rambam.health.gov.il

At his second wedding, architect Moti Schwartz, 44, a resident of Kiryat Haim (suburban Haifa), rejoiced and danced, but his disease—Marfan syndrome—very quickly brought him back to the reality he has known since childhood. While on his honeymoon, his vision blurred. Moti knew it was another instance of retinal detachment. He rushed to Rambam Health Care Campus for emergency surgery to correct the problem, one of six such operations that he has undergone in recent years.

Marfan syndrome is genetic, and Moti inherited it from his father and passed it on to two of his children—Shalev (16) and Reut (12). All display the characteristic appearance of people with the disorder—they're especially tall and thin (Moti is 1.97 meters tall, Shalev 1.95 meters, and Reut 1.60 meters). Despite their having learned to live with the syndrome and its associated difficulties, one thing is clear to Moti: he doesn't intend to bring another Marfan child into the world. "I must root out this heredity," he declares.

"Marfan syndrome is a multisystem disorder of the body's connective tissue, which manifests itself mainly in skeletal, cardiovascular, and visual problems," says **Dr. Eedy Mezer**, Head of the Pediatric Ophthalmology, Strabismus, and Genetics of the Eye Service at Rambam, who takes care of Moti and his children.

Dr. Mezer explains that the syndrome is characterized by a spectrum of mutations in the fibrillin gene. One of the disease's common clinical expressions is dislocation of the lens. The illness progresses slowly, can manifest itself as late as a person's twenties, and is liable to cause severe nearsightedness (myopia) or retinal detachment. Another common aspect of

the disease, and a main factor in the morbidity and mortality of this syndrome, is the enlargement of the aorta, which is liable to progress to aortic dissection or tearing.

When Moti was born, no awareness of the syndrome existed, and his parents didn't even realize that he was sick. "I was a taller-than-average kid, skinny and long-limbed, with visual problems requiring glasses," Moti says. "Because of my eye problems, I've been under clinical supervision ever since I can recall, but no one could tell me that Marfan was the cause."

Leading up to his Israel Defense Forces (IDF) induction at age 18, the crisis arrived. "I went through five or six diagnoses that included all kinds of tests. At the end they told me, 'you have a Medical Profile of 21.'*

"I asked naively, 'Why? It's a psychiatric defect?'

"They told me, 'No, you have Marfan syndrome.' They were the first to diagnose me. I didn't know what it was, but I felt relieved in a certain sense because finally I had a name for what I have." He adds that he refused to waive military duty, and served voluntarily in the Nahal Brigade, the Navy, and the Medical Corps.

A Syndrome Fraught with Dilemmas

In his mid-twenties, Moti married for the first time. Because no awareness of Marfan syndrome existed then (the gene causing the disease was identified only in 1991), he and his first wife didn't seek genetic testing and consultation.

A son was born to the couple—Shalev. "I immediately saw that he was a version of me. I knew that he would suffer. Alongside the happiness, I was in pain because I knew what was awaiting him," Moti recalls.

And indeed, at age four and a half, dislocation of the lens of Shalev's right eye

*Ed. note: unfit for military service.



The blended Schwartz family



When they told me I can't volunteer, I said I won't take 'no' for an answer. I wanted to feel like an equal among equals. I served voluntarily in the Nahal Brigade, the Navy, and the Medical Corps and received two Certificates of Excellence.

Moti



was diagnosed for the first time. "I brought him to Rambam and prepared the family for what lay ahead," Moti continues. "Shalev entered surgery to remove part of the lens, and in the course of surgery, developed a retinal detachment that could have left him blind. The surgeons roused **Prof. Benjamin Miller**, Director of the Ophthalmology Department at that time, and he saved the eye."

Dr. Mezer: "In Shalev's case, the condition of his eyes is complicated by a number of problems. He's been operated on for dislocated lenses, undergone successful surgery to correct strabismus, and also been treated with eyedrops due to glaucoma. The rehabilitation of his vision has been exceptional."

Shalev has twin sisters: Reut and Yuval. They're four years younger than he. "The pregnancy with the twins was spontaneous, and although we performed tests, the test for the fibrillin gene was not done. The doctors told us there was a fifty-fifty

chance that one of the babies would be sick and the other healthy. I prayed that we would beat the statistics, but when the girls were born, I saw immediately that one was indeed healthy and the other was like me and Shalev."

Three years ago Moti divorced, and about a year ago he turned a new leaf and married Yifat (35). They've established a warm home, but the issue of bringing a child into the world together has confronted them with a tough dilemma.

"We very much want to have children together," Yifat says, "but I'm not prepared to put Moti through another scenario of raising kids who suffer from Marfan."

Moti speaks much more firmly: "I'm not prepared to bring another Marfan child into the world. I hope that future research will find the key to this genetic disorder, but if for now the only way for us is to make a test tube baby, I'll go with that in order to have a healthy child we'll raise in joy."

Medical Consultants:



Dr. Eedy Mezer is the Head of the Pediatric Ophthalmology, Strabismus, and Genetics of the Eye Service at Rambam Health Care Campus.



Dr. Eyal Reinstein is Director of the Adult Genetics Service at Rambam Health Care Campus.

Cultivating Pears

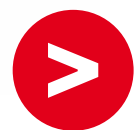
He prefers a juicy steak; she prefers cake.
He develops a potbelly; her pelvis and thighs expand.
When he diets, the scale indicator plummets;
when she diets, it budes slowly.

and Apples



Why is this so, and what can
be done to change it?

>> Eti Dor



You recognize that inner voice. Once again, it whispers to you that because of the chocolate cake you've just eaten, soon you won't be able to pull up past your expanding thighs the skinny jeans you bought last year. Your husband, who'd like another hamburger, loosens his belt a little and sighs. The pot that has recently begun to boil over bothers him. He never believed that he would overflow his jeans or that at age 40 he would already feel as tired and heavy as if he were 60. The two of you are struggling with weight gain that has hit you in midlife, but each of you expresses it differently.

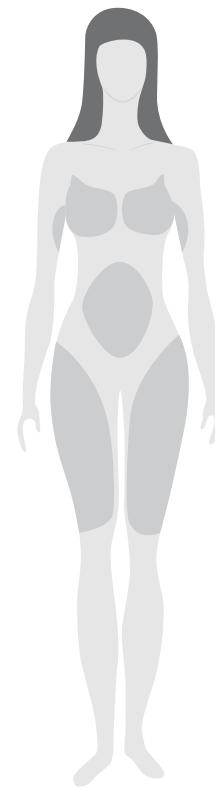
"The differences between men and women aren't by chance," explains **Dana Weiner**, Deputy Director of the Department of Clinical Nutrition at Rambam Health Care Campus. "In recent years, we've sharpened our understanding that men gain weight in one manner and women in another." In professional terminology, the phenomenon is called *gender nutrition*. This is a relatively new research discipline that was born from a wider field called *gender medicine*. Gender nutrition tries to give an answer to questions such as whether men and women gain weight for different reasons. Is their body image different? Do men utilize food nutrients differently from women?

The Men Went Hunting

"The dissimilarity between men and women begins first and foremost with the kind of fat each has and how it's dispersed throughout the body," Ms. Weiner says. "Men have a lower general fat mass, and when they suffer from overweight, they're more inclined to abdominal obesity, apple-like in shape, which is characterized by a gain in *visceral fat*. In contrast, overweight women are more inclined to pelvic obesity,



The location of fat in men



The location of fat in women

“In recent years, we've sharpened our understanding that men gain weight in one manner and women in another.**”**

Dana Weiner

Get involved

It will cost \$75,000 to build and equip the Clinical Nutrition Room in the new Joseph Fishman Oncology Center.

ROC@rambam.health.gov.il

pear-like in shape, which is expressed by a gain in *subcutaneous fat*. If we take a man and woman of the same height and weight, we'll find that in terms of fat dispersal and the kind and absolute amount of fat relative to muscle mass, there will be a considerable difference. In addition to the fat's location, the fat cells' size and number will differ. In the thigh area, fat cells are small and numerous whereas in the abdominal region, fat cells are large and few."

Why does this happen?

"The evolutionary explanation suggests an interesting theory," she explains. "In the past, men were hunters and required quick access to energy in order to search for food. The source of this energy is found in visceral fat, which breaks down relatively quickly. In contrast, the subcutaneous fat of women breaks down more slowly, such that it produces a sustained wellspring of energy. This reservoir would translate into nourishment when the women were pregnant or nursing.

"There is an additional difference, related to this significant metabolic dissimilarity, between the two kinds of fat. In abdominal obesity, fat cells secrete various hormones whose activity considerably increases the risk of developing such chronic diseases as arteriosclerosis, heart disease, and type 2 diabetes."

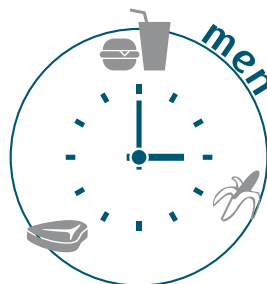
According to Ms. Weiner, the different kinds of fat and their dispersal are also connected to the secretion of hormones known to be important agents in regulating the mechanism of hunger and satiety. One of these hormones is leptin, which helps fertile women keep their figures and prevents visceral fat accumulation, she explains. "The subcutaneous fat that women accumulate secretes leptin, which curbs the feeling of hunger in the brain

Gender Nutrition



Women prefer to skip regular meals and to snack throughout the day

Men are inclined to eat big meals and almost never snack



and also curbs the secretion of insulin and increases the production of energy as the result of eating. At perimenopause, the picture changes. A decrease takes place in the hormones leptin and estrogen, and simultaneously an increase in the male hormone testosterone occurs. This is why perimenopausal women are more inclined to gain weight in the abdominal region and experience a significant increase in cardiac morbidity."

Should different diets be tailored to men and women?

"An unequivocal answer to this question has already been found. Today, we don't recommend making a distinction between the diets of men and women but instead advise personally tailoring individuals' diets to their habits and to the adoption of a healthy lifestyle."

Nutritional consultant:



Dana Weiner is the Deputy Director of the Department of Clinical Nutrition at Rambam Health Care Campus.

The Worst Headache of My Life

With these words, patients suffering from a bleeding brain aneurysm usually begin the description of their pain. Why does it happen, and how is the problem treated?

Eti Dor >> Photography:
Jonathan Bloom



A microscopic image of neurons, showing a central cell body with multiple long, thin, branching processes extending outwards. The image is in blue and white, with a dark blue background.

Get involved

The Invasive Neuro-Radiology Unit seeks \$1,062,000 to purchase a Biplane Neuro Angio System with Dyna-CT 3D reconstruction imaging.

ROC@rambam.health.gov.il

An intense headache, difficulty in freely moving her neck, sensitivity to light (photophobia), confusion and disorientation were the worrying symptoms experienced by Osnat, a young woman in her thirties. This happened to her about a year ago, but she well remembers the moment when she understood that the intense pain in her head wasn't signaling a migraine. When she came to the Emergency Room at Rambam Health Care Campus, she told the doctors that she was having the worst headache of her life. They immediately suspected that she was suffering from a bleeding brain aneurysm.

Osnat was admitted to the Cath Lab, where the Director of the Invasive Neuro-Radiology Unit at Rambam, **Dr. Yaaqov Amsalem**, performed a catheterization in order to obliterate the aneurysm.

"To Osnat's good fortune, she rushed to Emergency," he says, "and this made it possible for us to treat her quickly and to prevent complications later. After a period of rehabilitation, she returned to her normal life with full functioning."

A brain aneurysm is a condition where weakening in the region of a cerebral artery's wall causes the wall to expand in a balloon-like form. A rupture in the wall of the aneurysm can cause subarachnoid hemorrhage (bleeding into the cerebral envelope where the arteries are found). From one to five percent of the world's population suffers from "silent" brain aneurysms. Most people aren't aware that they have the condition and can live "to 120" without treating it, but approximately 1%–4% of these aneurysms are liable to bleed. "In this case, a 50% risk exists that the patient will die at home or on the way to the hospital," Dr. Amsalem says.

Family Connection

Each year at Rambam Health Care Campus, approximately 50 patients suffering from a brain aneurysm are treated, among them 35 emergency cases of subarachnoid hemorrhage. The clinical reasons for the formation of brain aneurysms aren't clear, although contributing factors include smoking and high blood pressure. Kinship is also a risk factor.

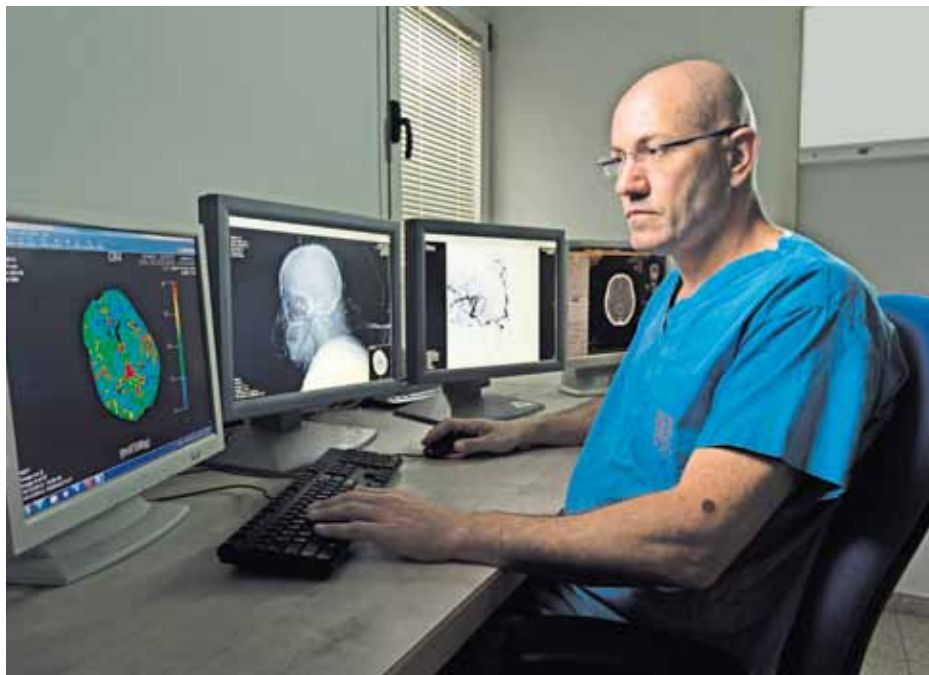
"If a patient is diagnosed with an aneurysm, an approximately 20% chance exists that an additional case will be discovered among his first-degree relatives," Dr. Amsalem explains. "This is the reason that relatives of our patients undergo cerebral blood vessel imaging.

"We perform a CT scan as an initial diagnostic test to identify a bleeding aneurysm. If the results are normal, we perform a lumbar puncture of the patient's spinal fluid in order to see if there are

The brain catheterization is performed via the groin.
L-R: Technician Esam Mousa, Dr. Amsalem, and (behind them) Nurse Ora Ben-Shimon.

1%-5%

of the world's population suffers from "silent" brain aneurysms. Most people don't know that they have the condition and can live to 120 without treating it.



indications of bleeding in the nervous system fluid. If the results indicate a problem, or if bleeding has been diagnosed in the CT scan, we go to an additional diagnostic stage—CT angiography. In this test, contrast material is injected into the cerebral arteries, and by means of 3D imaging, we can identify brain aneurysms or other pathologies of these blood vessels.

"In all cases where a subarachnoid hemorrhage has been discovered by means of imaging or a lumbar puncture, a diagnostic brain catheterization should be done to look for an aneurysm," he adds. "A bleeding aneurysm obligates treatment because if untreated, it carries a very high risk of aneurysmal rebleeding, which generally ends in the patient's death."

Brain Catheterization

"In the past decade, thanks to the introduction of advanced technologies, bleeding aneurysms are mostly treated through catheterization. The goal is to cut off the aneurysm from the arteries and prevent a rebleeding. The procedure is performed in our Cath Lab, which is equipped with a designated angiography machine for

delivering 3D images of the brain," explains Dr. Amsalem. "The patient is under full anesthesia, and via the groin, we insert a catheter of 2 mm in diameter that goes up into the patient's neck. We inject contrast material to enable imaging of the cerebral arteries and thus we can build a sort of map of the arteries in order to locate and identify the aneurysm.

"In the next stage, we insert a miniature catheter of approximately 0.5 mm in diameter or even smaller into the aneurysm. Via this catheter's trajectory, we insert platinum coils of various sizes and lengths into the aneurysm and suited to its shape until no blood can enter it, and thus we can repair it and prevent aneurysmal rebleeding.

"There are cases where an aneurysm's anatomy doesn't permit us to insert a coil, and so today we use such novel techniques as inserting a temporary balloon that separates the aneurysm from the cerebral arteries and thus protects them. Only in the next stage do we introduce platinum coils into the aneurysmal sac. In patients with a non-bleeding aneurysm, we can insert a stent that protects the artery and assists in closing the aneurysm."

"In the case of aneurysmal bleeding, a 50% risk exists that, God forbid, the patient will die at home or on the way to the hospital."

Dr. Amsalem

Medical consultant:



Dr. Yaaqov Amsalem is the Director of the Invasive Neuro-Radiology Unit at Rambam Health Care Campus.





21st Century Medicine >> Eti Dor

Thanks to the 3D camera, the physician has a better view of the surgical procedure. Prof. Ziv Gil in the OR.



Get involved

An OR1™ Endoscopic System for the Ear, Nose and Throat Department and Head and Neck Surgery costs \$100,000; disposable surgical equipment for the system costs \$360/week.

ROC@rambam.health.gov.il

Identity Card

Name: da Vinci Surgical System

Manufacturer: Intuitive Surgical, which developed the robot for NASA

Date of Birth: 1999. Entered service at Rambam in January 2011

Where to find it: The majority of the devices that have been sold are dispersed throughout the United States and Europe; one is at Rambam thanks to our generous donors. Use of the device is made possible at centers whose physicians have expertise in minimally invasive robotic surgery.

Price: \$2.5M

Robot at the Service of Breathing

Meet the most advanced solution for sleep apnea: surgery without bleeding or incisions, with the help of *da Vinci*, the world's most famous medical robot.

Do you suffer from snoring in the context of sleep apnea? Have you found yourself without any real medical solution up till now? What if a robot activated from afar by a human surgeon could reach through your mouth to the base of your tongue and solve the problem without bleeding, without pain, and without incisions? At Rambam, **Prof. Ziv Gil**, Director of the Ear, Nose and Throat Department and Head and Neck Surgery, performs this operation by means of the *da Vinci*, the famous robot developed by the NASA Space Agency and the U.S. Army. Prof. Gil is a world expert in endoscopic skull-base surgery and oncological head and neck surgeries, and has performed thousands of operations on the thyroid gland and excisions of tumors of the oral cavity, the tongue and the salivary glands.

? How does it work?

Until the development of the *da Vinci*, an effective surgical treatment hadn't been found for sleep apnea sufferers because in order to reach the base of the tongue, a surgeon would have to saw through the jawbone. In *da Vinci*-assisted surgery for sleep apnea, the physician, who is seated at a console in a corner of the operating room, inserts two slender robotic arms, one of which is equipped with an advanced three-dimensional camera, through the patient's mouth and performs surgery without the touch of human hands. The system enables the physician to examine a 3D image of the patient's throat in high-definition (HD) technology, and to operate on airway obstructions with the help of the robot's arms and miniaturized, wristed instruments.

? What are its benefits?

1 For the first time, patients have been given an effective, minimally invasive surgical solution to mild-to-moderate sleep apneas, and thus both the health problem and the snoring are brought to an end. In cases of severe sleep apnea, the use of a *continued positive airway pressure* (CPAP) mask is advised.

2 The surgery is considered simple and safe, with few risks. Throughout the world, thousands of successful operations of this kind have already been performed, and at Rambam, all the surgeries have been performed without complications and with excellent results.

3 Post-operative rehabilitation is quick and easy. In contrast to regular patients who have undergone major invasive surgery and afterward require pain relief medication, robotic-surgical patients quickly recuperate, and most can resume their usual activities within a day.

4 Thanks to the combination of a camera able to enlarge images and technology that renders these images in three-dimensional HD, the physician has a better view of the surgical area and surgical procedure with the fewest possible limits.

? Who can benefit from the robot's services?

Anyone who has been diagnosed with a mild-to-moderate case of sleep apnea, and patients who suffer from a significant level of snoring caused by an enlargement of the base of the tongue.

What is sleep apnea?

People who suffer from this sleep disturbance stop breathing for several seconds a number of times during sleep, and most also snore. This medical problem is considered severe when a person stops breathing five or more times per hour. Severe sleep apnea can even be fatal because those afflicted with it are liable to develop heart and lung diseases and depression, and are at greater risk of traffic accidents due to sleep deprivation. Quality of life is compromised even in mild cases; sleep apnea sufferers are tired during the day, and their functioning is affected.

Medical consultant:

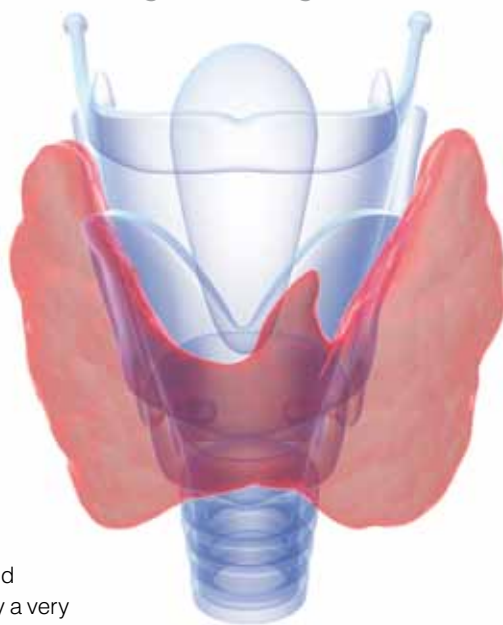


Prof. Ziv Gil is the Director of the Ear, Nose and Throat Department and Head and Neck Surgery at Rambam Health Care Campus.



The Thyroid Gland

10 things you didn't know about one of the body's most important engines for growth



1 Swallowing a Butterfly The thyroid gland is found at the front of your neck, weighs approximately 20 grams, is shaped like a butterfly or bow tie, and moves up and down when you swallow. It produces three hormones, the most important of which is thyroxine, also known as T4.

Keeping the Beat

In adults, the hormone thyroxine influences the degree of function of all the body's organs, among them the heart, the liver, the fatty tissue, the bones, and the brain. Thyroid dysfunction causes a disturbance in the normal activity of all these systems. In children, thyroid hormones influence the development of the body and the brain.

3 Dining on Iodine

Thyroxine is produced by the thyroid gland from the amino acid tyrosine and from iodine, whose source is nourishment. In countries where iodine is missing in the water or food, a higher incidence of thyroid gland enlargement and sub-activity (*hypothyroidism*) may occur.

4 Rev Your Engines An overactive thyroid gland (*hyperthyroidism*) is expressed by a very high degree of function of the body's systems: the heart rate accelerates, metabolism accelerates, the patient feels hot and experiences weight loss and diarrhea. An overactive thyroid also causes nervousness, trembling hands and sleep disturbances.



Medical consultant: Dr. Sagit Zolotov is a Senior Physician in the Institute of Endocrinology, Diabetes and Metabolism at Rambam Health Care Campus.

5 Surplus Cost Even a mild undiagnosed case of hyperthyroidism is liable to cause a decrease in bone density (especially in menopausal women), heart rate disturbances (atrial fibrillation), vision disturbances, and a decline in sleep hours and in mood.

10 Curable Cancer In recent years, an increase in the incidence of thyroid cancer has been observed. In most of the cases, we're speaking of cancer with a very high rate of cure, which is achieved by a combination of surgery, the administration of iodine, and treatment with thyroxine.

9 The Eltroxin Scandal

A change in the manufacturing process for the drug Eltroxin, which is used to treat a hypothyroid, caused balance disturbances and other side effects in many patients. Today these patients are treated with a replacement drug named Thyroxine, which is constituted of an alternative chemical preparation.

8 It's Complicated Treating an overactive thyroid gland is complicated because there may be several contributing factors. In rare cases, the gland must be surgically removed.

7 Such a Pill People who lack a thyroid (who've been born without it or had it surgically removed) and people whose thyroid gland is found to be hypoactive can compensate for this by taking a thyroxine (T4) hormone pill.

6 Low Gear Hypoactivity of the thyroid gland appears in approximately 5% of the adult population and is more prevalent in women. In this case, the body secretes too little thyroxine, and thus the bodily systems' degree of function decelerates.



From Vision to Reality

- In-depth visits to the new Ruth Rappaport Children's Hospital
- Meetings with top Rambam physician-scientists
- Health symposium
- The Rambam Award ceremony and gala dinner for the year 2014

We cordially invite you to join us

Save the date

June
22-24, 2014
Sun-Tue
Rambam
Health Care
Campus
Haifa, Israel



RAMBAM Summit
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Light Touch



Get involved

It will cost \$2M to construct and equip a 200 sq m Complementary Medicine Center within the Joseph Fishman Oncology Center.

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"The osteopathic approach is to try to prevent the need for surgery if it's possible to produce benefit from manual therapy."
Dr. Mervyn Waldman

For almost 40 years, osteopath **Dr. Mervyn Waldman** has treated patients in Israel. He received his training in his native land of England, which is among the world centers for the practice of the osteopathic method. If you ask Dr. Waldman to explain what exactly he does during treatment, he jokes and says, "Push and pull." But when (forgive the pun) pressed further, he explains that osteopathy is manual treatment that uses tactile pressure to influence such internal systems as the nervous and immunological systems. Osteopathy is meant to return the body to its natural, balanced and free anatomical state, and in this condition, the body's self-healing ability is higher. According to Dr. Waldman, osteopathic treatment also includes guidance for how to do specific exercises at home, nutritional advice, and sometimes even relaxation techniques. The therapy was invented 140 years ago by an American surgeon named Dr. Andrew Taylor Still.

Which kinds of medical problems can osteopathy help?

"Orthopedic problems such as back pain, knee pain, and muscle and joint pain. It's also effective for relieving pains whose source is various, and for treating such problems as asthma, digestive troubles, allergies, infections and more."

Who comes to you at the Pain Clinic at Rambam?

"People come to me who suffer from pain after an accident or trauma, infants after a traumatic birth, elderly people who suffer from skeletal or joint degeneration, people after surgeries in need of rehabilitation or who still suffer from pain, and cancer patients

whose pain is bothering them. The osteopathic approach is to try to prevent the need for surgery if it's possible to produce benefit from manual therapy."

Are there studies confirming the effectiveness of osteopathy?

"In recent years, research has been published confirming that the length of hospitalization shortens for patients with various illnesses when drug treatment is complemented by manual osteopathic treatment. This has been proven in patients with pneumonia or pancreatitis, for instance, and in children with middle ear inflammation."

Is there a case that you especially recall?

"To tell the truth, I can recall many cases, but perhaps I'll simply tell you about the most recent one. A port worker came to me with a neck injury incurred as a consequence of his job operating cranes. His injury led to very severe pain that radiated to his hands and was accompanied by weakness of the hands; he had arrived at a condition where he couldn't work. He had received injections and drugs to relieve the pain, but they didn't help enough. In the past several weeks, since he's been coming to me for treatment, his condition has improved considerably, and only today he told me that he has returned to full-time work. It goes without saying that he still feels pain sometimes, but according to him, it can't be compared to what it was."

Medical consultant: Dr. Mervyn Waldman is an Osteopath in the Pain Clinic at Rambam Health Care Campus.



Rambam's Ladder



What the Rambam Said:

וכן צו הרופאים לכל רופא, כי הוא, אם יוכל להנהיג החולי בשיעור המזון בלבד, לא ינהיג אותו ברפואה, ואם לא יוכל מבלעדי ההנהגה ברפואה, ינהיגו בעניינים מורגלים ברפואות ההזנה והמזונות המרפאות (אשר אינן מזון), ואם לא יוכל מבלעדי ההנהגה ברפואה, יתחיל ברפואות הקלות. ואם יספיק זה, טוב, ואם לא יספיק לחולה, יעתיק לחזק מהם ואחר כך ליותר חזק.

(Regimen of Health, 2:21)

And in simple translation:

A wholesome lifestyle includes correct nutrition in order to maintain good health for many years. If you develop a condition that requires treatment with medications despite this, you should be treated by a doctor, and he should use the proper medications and maintain the principle of gradation: from light to heavy.

What do the experts say today? ←

Prof. Shimon Pollack:

"Many studies have been conducted exploring the influence of emotions and lifestyle on the body's health. Results indicate that a life devoid of or freed from stress has a positive influence on non morbidity from colds and less morbidity from cancerous diseases. Correct nutrition and moderate physical exercise also play an important role in preventing cardiovascular diseases, degenerative diseases, and even certain cancers. A healthy soul and lifestyle go hand in hand with a healthy body. Regarding the principle of medicating 'from light to heavy,' it's also indeed correct today, and we use it in mild and stable cases of illness. If we're speaking of a severe and agitated illness, we usually implement the opposite principle: from heavy to light."

Medical consultant:

Prof. Shimon Pollack is past Director of the Allergy, Immunology & AIDS Institute at Rambam Health Care Campus and former Chair of the Department of Immunology at the Technion's Faculty of Medicine.

Three Tips for Good Health

- * **Stay relaxed and loose.** This will have a good influence on various immune system functions, especially those linked to defending the body against viral infections and ridding the body of malignant cells at the start of their development. How to relax? By such means as meditation, faith, exercise—everyone finds a suitable way.
- * **Eat in a measured and balanced way.** Consume a lot of vegetables, fruits and legumes, eat fish instead of meat, limit your intake of saturated fat and cholesterol in food, eat whole grains, and drink water instead of sweetened beverages.
- * **Keep a sensible calorie-to-exercise ratio.** Suit your activity to the amount of calories consumed from food. Choose the kind of exercise suitable for you and, in particular, stick with it.





West We Can

The percentages assigned to the visionary, symbolic, and real aspects of our new West Campus keep shifting in accord with the pace of construction.

In recent weeks, ramps have been paved and signage placed at entrances to the dual-purpose Sammy Ofer Fortified Underground Emergency Hospital, slated to open for peacetime parking this spring.

Above ground soar the Ruth Rappaport Children's Hospital, Joseph Fishman Oncology Center, and as-yet unnamed Cardiovascular Hospital. All day long, workers and material are ferried up and down the building exteriors via swing stages and construction elevators. Gymnasts in hard hats are putting the finishing touches on the children's-hospital façade and have also begun to sheathe the Fishman Center. The Ruth Hospital will welcome its first patients by summer.

At ground level, fresh asphalt markings and new traffic islands have begun to help direct the thousands of vehicles and pedestrians flowing through campus daily. Even the new sidewalks' square cement cobbles, placed by hand just so, are beautiful.

At the main entrance to Rambam stands the oldest building on campus, a lovely, late 19th century, former Carmelite monastery that today houses clinical and hospital-administrative offices. This graceful edifice, whose street façade was fenced off during the years spent excavating and constructing our West Campus, has recently been reexposed to public view and its front plaza handsomely paved and landscaped. We look forward to Mayor Yona Yahav's joining us on April 10th to reinaugurate the building.

Get involved

American Friends of Rambam (AFORAM) and supporters around the world have taken responsibility for urgently equipping the Fortified Underground Emergency Hospital with 2,000 beds. Some 250 standard and specialized medical beds have already been donated.

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Débutante.
The Ruth
Hospital
dons her
garment of
aluminum
cladding
and glass.





Rambam physicians exchange clinical and research knowledge and ideas with international peers because

Sharing is Caring

Shine a Light

PARIS | JULY 25–28, 2013 – Where better to highlight the most up-to-date clinical and research knowledge about personalized medicine's potential for helping the individual cancer or diabetes patient than Paris, host city to the Up Close and Personalized (UPCP) 2nd International Congress on Personalized Medicine.

The conference was chaired by Prof. Eddy Karnieli, Director of the Institute of Endocrinology, Diabetes and Metabolism at Rambam, and Director of the Galil Center for Personalized Medicine, Telemedicine and Medical Informatics at the Technion's Rappaport Faculty of Medicine. Mr. Uzia Galil served as president. The conference attracted participants from 42 countries.

Prof. Karnieli brought with him from Rambam an elite nine-member delegation of physician-scientists, among them Professors Derek LeRoith, Director, Diabetes and Metabolism Clinical Research Center of Excellence; Ora Israel, Director, Nuclear Medicine & PET/CT; Norberto Krivoy, Director Emeritus, Clinical Pharmacology Institute; and Lior Gepstein, Head, Sohnis Family Research Laboratory for Cardiac Electrophysiology and Regenerative Medicine.



There is an ever growing gap between the accumulating knowledge derived from scientific research discoveries of new molecular mechanisms and from recent medical and therapeutics options, and the use of these discoveries and options at the bedside by physicians. The purpose of this meeting is to narrow that knowledge gap."

Prof. Eddy Karnieli





Prof. Norberto Krivoy delivered a paper entitled “Genetic polymorphisms predicting methotrexate blood levels and toxicity in adult non-Hodgkin lymphoma,” which was subsequently published in *Leukemia & Lymphoma*.



Prof. Eddy Karnieli:
“You cannot go to a clothing store and buy a one-size and one-color dress that fits all. In medicine, 90% of drugs are effective for 50% of individuals, and that’s a problem! Physicians should be tailoring the medication to the individual. If we know which gene or protein is impaired (mutated) at the cellular level, we can target the culprit. In oncology, a lot of progress has been achieved. In diabetes and obesity, we’ve started.”



Prof. Derek LeRoith chaired a plenary session on diabetes and obesity, and also delivered a talk about the connection between type 2 diabetes and dementia.





IN BRIEF

Young Investigator

ATLANTA | MARCH 3–6, 2013 – Senior Physician Dr. David Shasha, who recently joined the Unit of Infectious Diseases and the AIDS Clinic of the Allergy, Immunology and HIV/AIDS Institute at Rambam, received a Young Investigator Award at the 20th Conference on Retroviruses and Opportunistic Infections (CROI) for his paper entitled “CD8 from Elite Controllers Exhibit Comparable Antiviral Capacity but Favorable Functional Profile Compared to Untreated Progressors.”

GI Joe

CHICAGO | MAY 2013 – Prof. Ian Gralnek has been elected to a three-year term on the Governing Board of the American Society for Gastrointestinal Endoscopy (ASGE). This is the first time that the 12,000-member international organization has named someone who is not residing in the USA to a leadership position. At Rambam, Prof. Gralnek is Chief of Hospital-Wide Ambulatory Care Services and a Senior Physician in the Institute of Gastroenterology.



My position on the Governing Board is a policy making position for the world's largest GI endoscopy society, with impact worldwide in terms of ASGE standards of endoscopy practice and quality measures for GI. This also allows me to push the GI endoscopy agenda within Israel.”

Prof. Ian Gralnek

Not the Quidditch Kind

TORONTO | MAY 12–16, 2013 – When Team Captain Harry Potter was Bludgered, he should have apparated to Rambam, where Prof. Nahum Rosenberg, a Senior Physician in the Division of Orthopaedic Surgery and Head of the Laboratory of Musculoskeletal Research, conducts advanced research into bone regeneration and bone tissue engineering. Prof. Rosenberg recently chaired a symposium entitled “Biology and Biomechanics of the Rotator Cuff” at the 2013 International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) Biennial Congress.

Jawsome Partnership

CAMBRIDGE, MASS | JUNE 2013 – Dr. Liran Levin, Head of Research at the Graduate School of Dentistry at Rambam, spent academic year 2012–2013 as a Visiting Professor at the Harvard School of Dental Medicine. He taught postgraduates and also took part in the ceremony conferring DMSc and MMSc degrees on his students, who lauded him in turn for dedicated teaching. The two schools of dentistry enjoy a deepening partnership that involves academic exchange and joint research programs.

Surf's Up

RAMBAM HCC | JULY 2013 – *Rambam Maimonides Med J* is indexed by PubMed, a foremost database search engine consulted by clinician-scientists around the world. *The Rambam Maimonides Medical Journal*, launched in 2010, is the first-ever medical center-affiliated journal to be published in Israel. This international, open-access, peer-reviewed journal is published online only at www.rmmj.org.il.



Friends Help Build a Hospital

Snapshots July 2013 – December 2013



Dr. Esty Golan, Chief Operating Officer, Rambam Health Care Campus, receives the gift of a historical scroll from Mrs. Zhang Jianxin, Vice Governor of Shanxi Province, China. Mrs. Zhang led a six-member mission to Rambam whose delegates included high-level Foreign Affairs and Health officials.

July 2013



Ms. Amanda Diamond is pictured on the Rambam campus, at work in the Research Laboratory for Molecular Medicine of Prof. Karl Skorecki. She is the daughter of Ms. Valerie Mosley, Chairwoman of the inaugural On the Vine fundraising music festival in support of Prof. Skorecki's lifesaving kidney research. The fundraiser took place August 22nd-25th on Martha's Vineyard.

July 2013



When you walk into a grocery store, you walk into a pharmacy! How did the RAMBAM, who lived almost 1,000 years ago, know that?"

Dr. Mehmet Oz

"Eat the foods you love that happen to be good for you, and then stop between the first and third bite of what you hedonistically love," Dr. Mehmet Oz, a cardiovascular surgeon and the Emmy® Award-winning star of the Dr. Oz Show, encouraged his charmed SRO audience of physicians, nurses, patients and their families at Rambam.

August 2013



The Phoenix Suns, members of the NBA, hosted Haifa's beloved Maccabi Haifa team at an exhibition game in Phoenix benefiting Rambam. Mr. Jeffrey H. Rosen, owner of Maccabi Haifa, appears flanked by Ms. Michele Segelnick (R) and Ms. Lea Bernstein (L), American Friends of Rambam (AFORAM) Executive Director and Associate Director respectively.

October 2013





Friends Help Build a Hospital



Manhattan's Park East Synagogue hosted "Standing United with Israel," an event jointly sponsored by the Friends of Israel (FOI) Gospel Ministry and AFORAM. L-R: Rev. Timothy Munger, Ms. Michele Segelnick, Rev. Robert Johnessee, FOI Executive Director Dr. Jim Showers, and Ms. Lea Bernstein. October 2013



Pictured at Rambam are Mexican actress Ms. Angélica Vale with Mr. Jorge A. Plasencia, CEO of República, LLC and Chairman of the National Council of La Raza, who came to our medical center as part of a high-powered media and entertainment delegation, the Hispanic Leaders Mission to Israel. October 2013



Los Angelenos were treated (not tricked) at Halloween when Prof. Rafi Beyar, Director and CEO of Rambam, gave two guest lectures, one at a reception at the residence of Dr. Uri Resnick, Deputy Consul General to Israel, and the other at the Younes and Soraya Nazarian Center for Israel Studies. We were delighted to host Mr. and Mrs. Nazarian at Rambam in January 2014. October 2013



Israeli Friends celebrate Rambam's 75th Anniversary Gala, held at the Rappaport Auditorium in Haifa. Musicians Israella Asago (pictured) and Yehuda Poliker and his band rocked the house, and received not only standing but also dancing ovations. December 2013



L-R: Prof. Rafi Beyar, Mr. Warren Buffett, and Dr. Esty Golan toast Rambam's health.

Hathaway About Him

Businessman, investor, and humanitarian Mr. Warren Buffett has presented Rambam with a \$10M gift toward completion of our new West Campus. The occasion was a dinner in November at which American Friends gathered in Manhattan to celebrate Rambam. Mr. and Mrs. Eitan and Ariela Wertheimer and Mr. and Mrs. Sanford I. and Joan Weill co-hosted. Mr. Buffett was Guest of Honor. Professors Rafi Beyar and Karl Skorecki and Dr. Esty Golan represented the hospital leadership. Also among those present were AFORAM President Mr. Adam Emmerich and his wife, Pamela; AFORAM Secretary and Treasurer Mr. David Sterling and his wife, Mona; and Friends of Rambam Mr. Eyal Ofer, Mr. and Mrs. Idan and Batya Ofer, and Mr. and Mrs. Paul and Herta Amir.



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Ruth

Ruth Rappaport Children's Hospital

Rambam Health Care Campus



Yarkoni

Something big is happening in Haifa!

**We are creating
the future of
pediatric medicine**

The new Ruth Rappaport Children's Hospital is being built at Rambam Health Care Campus. The aluminum-cladded, glass-curtained facade is meant to suggest a simple, white box (perhaps a toy box). The three pillars of bright red, green and blue—to suggest the children's game of jackstraws—rise seven flights to support the building's cantilevered uppermost two floors, which close the top of the box.

What's inside the box?

- 17,000 sq meters
- 9 floors
- 7 inpatient pediatric departments
- 20 specialized pediatric units
- Family rooms
- Classrooms
- Theater for films and plays
- Hands-on, interactive science museum

The design invites kids and their families to heal and play.

YOU CAN HELP build and equip the Ruth Hospital for Rambam's youngest and most vulnerable patients.

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