



Carnegie Shul Chatter

August 30, 2018



Candle lighting 7:35 pm Shabbat Services 9:20 am

Miracles of Medical Science

Isn't medical science an incredible thing?

I remember when I was a kid and the scourge of polio haunted children and their parents with a fear of braces, crutches, iron lungs, and even death. But Drs. Jonas Salk and Albert Sabin, both Jewish, developed vaccines that helped to all but eliminate this terrible disease.

Cancer has not been completely conquered, but many treatments now exist for many types of cancer that allow patients to survive this killing disease.

Do you remember smallpox and the vaccination mark on your arm that you had as a kid? Smallpox has also been soundly defeated.

Measles still exist, but there are vaccinations to prevent measles, pneumonia, shingles, and so many more severe illnesses.

The life spans of humans keep expanding, but with increased years comes new medical challenges such as Alzheimer's Disease, but I am confident that someday scientists will develop a cure for that one too.

Death is something which we will all have to face at some point, but why rush the inevitable?

I love what man is doing to make our days on this earth a bit more numerous and a lot more healthy.

After all, life is God's greatest gift to us.

And the Eyes Have it!

On Monday, August 13 and again on Monday, August 27, I had surgery to correct cataracts and a bit of glaucoma in my eyes. The surgery, performed by Glaucoma – Cataract Consultants, of which our Shul's Dr. Evan Dreyer is the CEO, went very well and here I am working on the Chatter just one day after the second surgery.

So, while I am extra aware of the miracle of eye sight and all of the beauty that God has placed in our universe for us to see, I thought

that I would share this article, published just last week at www.israel21c.org, which talks about an advancement in eye care being developed by Israeli doctors that would truly be a miracle for many people who now must wear eye glasses.

Advanced eye drops may allow you to chuck your glasses

Two Israeli startups describe how their clinical-stage products could radically change the way people correct their vision.

By Abigail Klein Leichman

Would you rather wear glasses or contact lenses, have laser surgery, or put drops in your eyes to see well? Consumers are starting to demand the third option, as new scientific advances have made corrective eye drops possible.



This is big business: A couple of years ago, pharma giant Novartis acquired a company developing a topical treatment for age-related farsightedness (presbyopia), while others are experimenting with eye drops to dissolve cataracts.

In Israel, two startups are in the clinical stages of testing their corrective eye drops. ISRAEL21c asked them to explain how their different approaches could radically alter the way people improve their vision.

ORASIS: Goodbye, reading glasses

Orasis Pharmaceuticals of Herzliya recently raised \$13 million to continue developing pharmaceutical-grade eye drops intended to improve near vision so people won't need their reading glasses.

CEO Elad Kedar says presbyopia affects the majority of people over age 45, giving Orasis a potential market of nearly 2 billion people around the globe; 120 million in the United States.

"The lenses in our eyes, like any other organ, get old and gradually lose the flexibility to change shape to focus on near objects," Kedar says. "The reduction in flexibility makes it difficult to focus on near objects and eventually you need reading glasses." Although reading glasses are effective, he continues, many people don't like using them because they are inconvenient and easily misplaced, and they are considered a sign of old age.

"There has been a long journey to find alternative solutions such as contact lenses or inlays, but all have problems of efficacy, safety or convenience of use. We developed a first-in-class pharmacological solution using a combination of existing molecules already used in the eye for other indications. You just put a drop in each eye and you can potentially see well for several hours. It can be very safe and convenient."

More than five years of R&D have gone into Orasis' CSF-1 patented formula. Following studies in humans in a few centers in Israel and Europe — results are soon to be published — the next step is a Phase 2b study in the United States, Kedar tells ISRAEL21c. "We have started the regulatory process," he says.

The latest funding round was led by California-based Visionary Ventures, with participation from investors including from Sequoia Capital, SBI Japan-Israel Innovation Ventures, and New York-based LifeSci Venture Partners. Visionary Ventures' Jeffrey Weinhuff and SBI's Masafuyu Tanaka joined the Orasis board of directors.

NANO-DROPS: No more blurry vision

Developed at Bar-Ilan University's Institute of Nanotechnology and Advanced Materials (BINA) in Ramat Gan, Nano-Drops offers a patented solution for correcting all refractive errors that cause blurry vision — farsightedness, nearsightedness and astigmatism.

In preclinical tests using pig eyes (which are similar to human eyes), Nano-Drops achieved a correction of 3 diopters for farsightedness and 2.5 diopters for nearsightedness by locally modifying the corneal refractive index. Further fundraising, development and in vivo animal testing is coming next, followed by a human trial in late 2019.



From left, Nano-Drops developers Dr. David Smadja, Prof. Zeev Zalevsky and Prof. Jean-Paul Moshe Lellouche.

Nano-Drops are meant to be applied in a three-step process.

First, the user measures refraction using any of several existing smartphone apps. A proprietary laser device — standalone or clipped onto a smartphone — then uses that measurement to stamp an individualized optical pattern onto the top layer of the cornea in a few milliseconds. (This is not the same as laser ablation; it is a delivery method using fast, painless pulses.)

Finally, synthetic biocompatible protein nanoparticle drops are applied to the eye to enhance and activate the stamped optical pattern. The result is a change in the refractive index and ultimately modification of the trajectory of light passing through the cornea.

"We don't know how long the effect lasts because we haven't done in vivo experiments yet," says Dr. David Smadja, an ophthalmologist at Jerusalem's Shaare Zedek Medical Center and a BINA research associate. "In January we will do in vivo tests on rabbits or pigs."

Smadja immigrated to Israel from France three and a half years ago. "I'm a physician, so I see every day what I don't have in hand to treat my patients and I'm always looking for what is missing," he tells ISRAEL21c.

“But technology is not my field, so I started working with Prof. Zeev Zalevsky [from Bar-Ilan’s Kofkin Faculty of Engineering] and he makes my ideas real. We’ve been working on Nano-Drops for two years. Now we have many projects together.”

The other partner in developing Nano-Drops is Prof. Jean-Paul Moshe Lellouche, head of the chemistry department at Bar-Ilan. The university’s Birad Research & Development Company has filed a patent for Nano-Drops and is working with Nano-Drops cofounder and chief business officer Steve Elbaz to commercialize the new technology.

“In the future, this technology may enable patients to have their vision corrected in the comfort of their own home,” says Smadja.

A Sell Out

A crowd of more than 300 people gathered at the Hollywood Theater last night for the Carnegie Shul’s presentation of the film, *Making Trouble: Three Generations of Funny Jewish Women*.



Special thanks to South Hills Jewish Pittsburgh for funding the event, and to co-sponsors Temple Emanuel, Beth El Congregation, the Jewish Community Center, and Hadassah.

“Making Trouble: Three Generations of Funny Jewish Women,” tells the story of six of the greatest female comic performers of the last century – Molly Picon, Fanny Brice, Sophia Tucker, Joan Rivers, Gilda Radner and Wendy Wasserstein. The movie was extremely entertaining and was very well received by the sellout crowd.

Yahrzeit Plaques

Commemorate a loved one by dedicating a yahrzeit plaque in his or her memory at the Carnegie Shul. These beautiful plaques, mounted on the sanctuary walls, are lit on the loved one’s yahrzeit, Yom Kippur, and days when Yizkor is recited. The names are also read aloud from the Bimah during services on the Sabbath of the yahrzeit and on Yom Kippur. To purchase a plaque, for only \$175, please email Mike Roteman at mrmike7777@yahoo.com.



Please consider sponsoring a Kiddush in honor or in memory of a loved one, for only \$36. Your sponsorship will be announced from the bimah and in the weekly Chatter. To sponsor a Kiddush, email mrmike7777@yahoo.com.

Holiday Schedule 5779

Rosh Hashanah

Sunday, September 9

Evening service..... 7:15 pm

Monday, September 10

Preliminary Service8:30 am

Shacharis 9:00 am

Torah Reading10:00 am

Sermon.....10:45 am

Musaf11:15 am

Recess..... 1:15 pm

Tashlich 6:15 pm

Minchah 7:00 pm

Maariv 7:15 pm

Tuesday, September 11

Preliminary Service 8:30 am

Shacharis9:00 am

Torah Reading10:00 am

Sermon10:45 am

Musaf11:15 am

Yom Kippur

Tuesday, September 18

Kol Nidre 7:00 pm

Maariv 7:45 pm

Wednesday, September 19

Preliminary Service9:00 am

Shacharis9:30 am

Torah Reading10:30 am

Sermon.....11:15 am

Yizkor.....11:45 am



Musaf 12:15 pm

Recess2:30 pm

Minchah5:45 pm

Neilah..... 6:45 pm

Shofar..... 7:45 pm

Break the Fast 7:50 pm

Sukkos

Monday, September 24

Morning Service..... 9:20 am

Tuesday, September 25

Morning Service..... 9:20 am

Shemini Atzeres

Monday, October 1

Morning Service..... 9:20 am

Yizkor 11:00 am

Musaf..... 11:40 am

Simchas Torah

Tuesday, October 2

Morning Service..... 9:20 am

South Hills

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with Rabbi Danny Schiff, Foundation Scholar

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