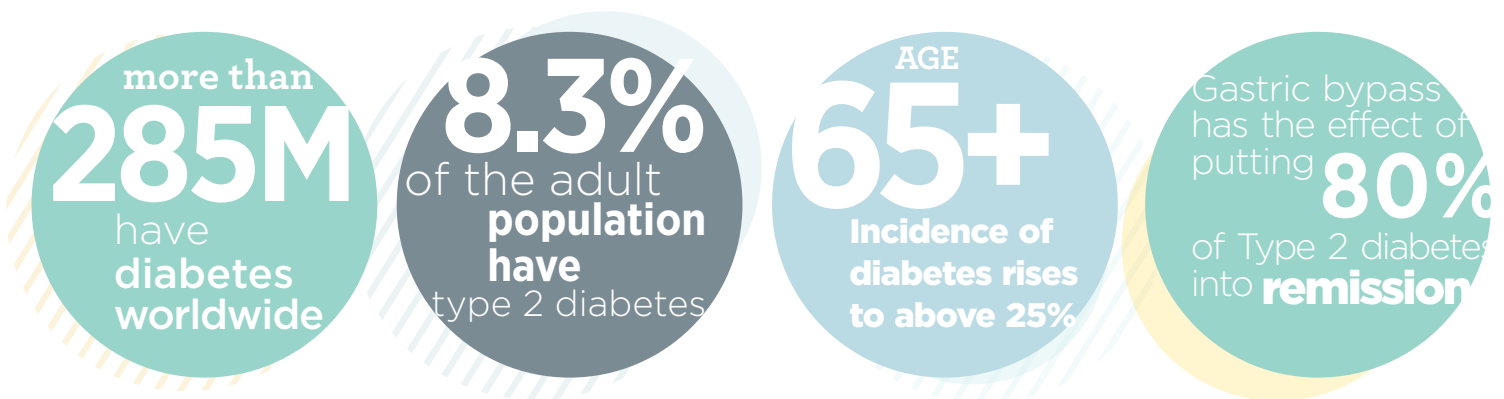


**NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD)** affects the liver, the body's second largest organ, which is responsible for processing what we ingest and removing toxins from the blood. NAFLD, **frequently an outgrowth of diabetes, high cholesterol and obesity**, is an accumulation of excess fat in the liver of people who drink little or no alcohol. This condition can lead to inflammation and scarring, which interfere with proper liver function. In its severe form — called non-alcoholic steatohepatitis (NASH)—liver cell inflammation and scarring can progress to cirrhosis, liver cancer, and complete organ failure.



### HMO RESEARCH:

- Hadassah Medical Organization researchers led by Prof. Rifaat Safadi, head of Hadassah's Liver Unit, have discovered a phenomenon about immune system Natural Killer (NK) cell Neurologin 4. In their healthy state, Neurologin cells kill scar-tissue cells; however, when there is an over-expression of these cells, they can trigger cirrhosis of the liver by preventing the body from combating scarring.
- Hadassah researchers demonstrated that cow Colostrum, the milk produced immediately after calving, dramatically lowers the level of sugar and insulin resistance in mice with non-alcoholic fatty liver disease.

Clinical trials confirmed the safety and efficacy of treatment of NAFLD with IMM-124E, a natural product which contains Bovine Colostrum Powder.

### NEXT STEPS:

- Clinical trials with the Hadassah-developed treatment for NAFLD—IMM-124E—are moving forward in 25 medical centers in the US and Australia.

With increasing incidences of obesity, diabetes, and fatty liver disease, Hadassah's researchers are focused on developing effective, innovative, less invasive treatments for these prevalent diseases.

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## DIABETES and NON-ALCOHOLIC FATTY LIVER DISEASE

Type 2 Diabetes and Non-Alcoholic Fatty Liver Disease (NAFLD) often go hand in hand. This is no coincidence because the same characteristic—obesity—puts individuals at high risk for both. As obesity becomes more prevalent, this combination of diseases will plague more and more people, with the potential for serious consequences.

**DIABETES** affects more than 285 million people worldwide. The disease is forecast to reach 485 million cases by the year 2030, according to the International Diabetes Federation.

Currently  
**THERE IS**  
**NO**  
EFFECTIVE  
MEDICINAL  
TREATMENT

Occurrence  
ranges from  
**9** TO **36.9%**  
of population in  
different parts  
of the world

Obesity  
and insulin  
resistance  
**PLAY A STRONG**  
**ROLE IN**  
NAFLD

It is the  
**PRIMARY FORM**  
of liver disease  
among  
children

### HMO RESEARCH:

The International Society for Medical Innovation and Technology (SMIT) awarded its International Prize for Medical Innovation and Technology to Prof. Yoav Mintz, Director of Hadassah Medical Organization's Center for Innovative Surgery, for his research aimed at curing diabetes.

- Prof. Mintz developed a novel nonsurgical method to perform gastric bypass without a single incision or anesthesia. The procedure uses an endoscope to place magnets into the small intestine and stomach, facilitating the body's natural healing process.

The work of Prof. Miriam Kidron, a Senior Researcher in HMO's Diabetes Unit, and her team led to the development of an oral insulin pill that has the potential to revolutionize the treatment of diabetes.

### HMO COLLABORATIONS:

Harvard Medical School and its teaching affiliate, Brigham and Women's Hospital

### NEXT STEPS:

- Oramed Pharmaceuticals Inc. is continuing to conduct clinical trials with the Hadassah-initiated oral insulin pill, testing its safety and efficacy.
- A Hadassah-developed therapy to treat diabetes, including an orally administered antibody, will be tested in a new clinical trial. It has already been found to be safe and effective in clinical trials at Hadassah.

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