



Matthew Fink

**EDITORS' NOTE** In addition to his current roles, Dr. Matthew Fink is Chief of the Division of Stroke and Critical Care Neurology at New York-Presbyterian Hospital/Weill Cornell Medical Center and President of the Medical Board. Dr. Fink attended college at the University of Pennsylvania, medical school at the University of Pittsburgh, and served as resident and chief resident in internal medicine at the Boston City Hospital. He trained in neurology at the Neurological Institute of New York/Columbia Presbyterian Medical Center, and served as chief resident under Dr. Lewis P. Rowland. Subsequently, he joined the faculty of Columbia University and became the founding director of the Neurology-Neurosurgery Intensive Care Unit at New York Presbyterian Hospital and was appointed Associate Professor of Clinical Neurology and Neurosurgery while at Columbia. Prior to joining the faculty of Cornell, Dr. Fink served as President and Chief Executive Officer of Beth Israel Medical Center in New York, as well as Chairman of the Barbara and Alan Mirken Department of Neurology, Director of the Comprehensive Stroke Center, and Co-Director of the Hyman-Newman Institute for Neurology and Neurosurgery. He was Professor of Clinical Neurology and Clinical Medicine at the Albert Einstein College of Medicine of Yeshiva University. Dr. Fink was a founding member and chairman of the Critical Care Section of the American Academy of Neurology and the Research Section for Neurocritical Care of the World Federation of Neurology. He is board certified in internal medicine, neurology, critical care medicine, vascular neurology, and neurocritical care.

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# Reducing Stroke Risk

An Interview with Matthew Fink, M.D.,  
Louis and Gertrude Feil Professor and Chairman of the Department of Neurology  
at Weill Cornell Medical College, and Neurologist-in-Chief,  
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## For those patients who have suffered a stroke, what is their biggest concern?

My patients are concerned with preventing a second stroke or not having one.

In those patients who have had a severe stroke and are disabled, the most common question is if they will be able to go home, because the greatest fear that people have is they're going to end up in a nursing home, even if they aren't able to go back to work, which often will happen. The greatest concern is if they can be with their families.

## How does someone prevent a stroke?

We are in an era where we can prevent 80 percent of the strokes that we are now treating, and everyone would agree that preventing a stroke is far better than trying to treat it.

The good news is that the same recommendations we make for preventing heart attacks will also for the most part prevent a stroke.

The single most important problem to deal with is high blood pressure. If one's doctor says they have high blood pressure, they need to take it seriously to lower it. Part of that is going to be changes in diet and probably taking medication.

After that, there is a list of what we refer to as risk factors that are things one can eliminate to reduce stroke risk.

## Will you talk a bit about clinical trials for stroke?

We're involved in a number of trials that are sponsored by the National Institutes of Health as well as private industry pharmaceutical companies that are developing new drugs. One of the most important areas has been to develop treatments that can reduce the damage to the brain at the time a stroke occurs. Unfortunately, no drug has been found effective in accomplishing that, in spite of testing hundreds of compounds.

What we have found to be effective is Therapeutic Hypothermia, which is cooling the brain at the time that a stroke or any other damage occurs.

A cooling trial is being developed to test out that treatment on patients who have had acute strokes, and I believe we're going to discover this is quite effective and may change the way we treat patients who come in with an acute stroke.

In addition, we are using some new blood-thinning drugs that are stronger than the current approved drug TPA, and we're also looking at how we can alter blood circulation by increasing blood pressure, increasing cardiac function in a way that delivers more blood to the brain.

We're also conducting more trials to look at how we can prevent strokes from occurring, and there is great interest right now in looking at the use of the statin drugs, which have been used to manage heart disease for a long time, and their use for stroke prevention.

## What kind of treatments are available for stroke sufferers?

A few years ago, scientists looking at other animals discovered that new brain cells can grow in damaged areas through something called neurogenesis. Suddenly, there was a tremendous amount of activity in rehabilitation.

There were two approaches: one was to directly stimulate the brain on the surface with either magnetic or electrical stimulation, which seemed to stimulate the growth of new brain cells.

The other was to stimulate the end organ, the periphery, so if the hand was paralyzed and we passively stimulate the hand by repetitive motion, and that is what the robots do, then there is a retrograde stimulation that occurs where it works its way back up the nervous system to the brain and stimulates the brain to make new connections.

If we can combine the robotic stimulation of the hand with electrical stimulation of the brain itself, then potentially we can have a robust type of recovery, which we haven't seen before.

The robotic therapies, which we're actively using now, in preliminary studies have shown just that. We can take someone that had a stroke even a few years ago reach their point of maximum recovery and treat them with a robotic device, and they will show improvement above and beyond where they went years earlier. Our investigators have also shown that the brain itself shows evidence of recovery.

This is the start of a whole new way of doing rehabilitation. ●