

# Understanding Pelvic Floor Disorders

One out of every nine women has surgery for pelvic floor disorders throughout the lifespan. Yet, these conditions are rarely talked about, and many people do not know what they are or what causes them. This edition of *Women's Health* is dedicated to bringing light to the problem of pelvic floor disorders.

## What Are Pelvic Floor Disorders?

There are two types of problems that women experience that are caused by vaginal birth and advancing age:

- 1) One occurs when the pelvic organs (bladder, uterus, vagina, and rectum) fall downward and bulge out through the opening of the vagina. This problem is referred to as pelvic organ prolapse.
- 2) The second refers to problems women have controlling their urine flow or their bowels. This is referred to as incontinence and can be a problem of urinary or fecal incontinence.

A woman may have problems with incontinence, with pelvic organ prolapse, or both.

## What Leads to Pelvic Organ Prolapse?

When the muscles and ligaments that support the vagina and hold it in place fail and the vagina falls down, the other pelvic organs, which are next to the vagina, fall down as well. The most damaging thing for both the pelvic muscles and ligaments is when a woman delivers a baby. During childbirth, the pelvic muscles have to stretch a great deal for the baby to come out of the vagina. This sometimes causes an injury to the muscle that leaves it weaker than it originally was. Other times, the nerve that controls the muscle is damaged so that the muscle does not contract to hold the pelvic organs up.

When the muscle fails, often the ligaments, which are fibers that attach the vagina and uterus to the walls of the pelvis, catch the organs and hold them in place for a while. However, the ligaments can be weakened and damaged, as well. Vaginal delivery can cause a ligament or muscle to be damaged. Advancing age also weakens the ligaments in some women, as do some diseases or chronic smoking.

## What Leads to Incontinence?

Urinary incontinence is when a woman cannot maintain urine control until it is convenient for her to empty her bladder. It can be caused by a weakening of the pelvic muscles and urethra (the tube that connects the bladder with the outside) or because of damaged ligaments. When weakened, the pelvic muscles and urethra cannot contract enough to hold urine in when stress is placed on them, such as during a strong cough or sneeze.

Urinary incontinence also occurs when a woman cannot control the muscles of the bladder. In these circumstances, the bladder will empty when it has reached a certain degree of filling (such as it does in children before toilet training) or when something happens to make the woman feel like she needs to urinate, such as the sound of running water.

Fecal incontinence, or bowel accidents, is caused 1) by a weakening of the sphincter muscle, which holds the stool in; 2) because the pressure of the bowel contents against the sphincter muscle is too great; or 3) a combination of these factors. The most common cause of injury to the sphincter muscle is vaginal delivery.

**For more information on pelvic floor disorders, contact the Women's Health Resource Center at (734) 936-8886.**

## The Pelvic Floor Research Group

# Discovering *New Options* for Women with Pelvic Floor Disorders

Every year, 300,000 American women have an injury during vaginal childbirth that leads to incontinence and other pelvic floor disorders. However, research on pelvic floor disorders has lagged far behind research in other areas of health. To date, there are many unanswered questions about pelvic floor disorders—questions whose answers will help to prevent these conditions.

Furthermore, pelvic floor disorders are not discussed in the health care setting as much as they should be. Women who see their providers for problems with incontinence are too often met with the attitude of “You’re a woman, you’ve had a couple of babies, what do you expect?” Dr. John DeLancey of the University of Michigan Health System (UMHS) Pelvic Floor Research Group answers that question by saying that a woman should expect to do whatever

it is she needs to do every day in an active and busy life without incontinence interfering with her activities.

The Pelvic Floor Research Group at the UMHS is the leading research group in the world working to improve the understanding and treatment of pelvic floor disorders. The Group has two major areas of focus: 1) discovering the basic mechanism underlying the problem of pelvic floor disorders (i.e., exactly what has gone wrong) and 2) putting the knowledge into practice with cutting-edge strategies for prevention and treatment of pelvic floor disorders. In other words, the goal of the Group is to identify risk factors for developing pelvic floor disorders and to work with high-risk women to prevent them. In addition, the Group provides the most effective and newest treatments for pelvic floor dysfunction.

The Group, which came together 10 years ago, is an interdisciplinary assemblage of UM providers and researchers, including Dr. DeLancey (Norman F Miller Professor of Obstetrics and Gynecology), Dr. Dee Fenner (Associate Professor of Obstetrics and Gynecology), Dr. James Ashton-Miller (Distinguished Senior Research Scientist, Department of Biomechanical Engineering), Dr. Carolyn Sampsel (Professor, School of Nursing), and Dr. Janis Miller (Research Investigator/Nurse Practitioner, Obstetrics and Gynecology). This cutting-edge research group is focusing on four areas: using computer modeling to study injuries to the pelvic floor that occur during childbirth; using advanced magnetic resonance imaging of the pelvic floor to study the details of pelvic floor injury in women with incontinence and prolapse; developing innovative technologies for improving the assessment of pelvic floor muscle strength and urethral function; and

using the detailed information from the studies to improve selection of patients for proper treatment.

The two physicians, Dr. DeLancey and the newly appointed Dr. Fenner, along with the Ph.D.-prepared nurse practitioner, Janis Miller, devote



*The Pelvic Floor Research Group*

their entire clinical practice to seeing women with pelvic floor disorders. The advanced level of research combined with the high-quality clinical care makes the University of Michigan Health Center the top pelvic floor center in the country, if not the world.

### The Women's Health Program Would Like to Introduce...

## Dr. Dee Fenner

Dr. Fenner, a nationally distinguished obstetrician/gynecologist, is the newest addition to the Pelvic Floor Research Group. She has been appointed Director of Gynecology, Associate Chair for Surgical Services, and is an Associate Professor of Obstetrics and Gynecology at the UM Medical School. Dr. Fenner completed her residency at the UMHS, and then left the UMHS to complete a fellowship at the Mayo Clinic. After that, she practiced gynecology at Rush Medical Center in Chicago before becoming Vice Chairman of Obstetrics and Gynecology at the University of Washington. Her clinical practice at the UMHS is dedicated to treating women with pelvic floor disorders.



## Learning “the Knack”

The Pelvic Floor Research Group has discovered that teaching a woman when to use her pelvic muscles properly can help her stop urine from leaking out. A learned skill of contracting the muscles at the moment of expected leakage can be taught in three phases.

First, a woman must find the right set of muscles to contract. Often women “try too hard” and end up straining down instead of contracting up and in. An attempt at a gentle squeeze, as if holding back gas, often corrects this. Second, a woman must learn to hold the muscles contracted while doing a second activity. To learn this

skill she should first contract her muscles and learn to breathe at the same time (most women hold their breath at first). Then she can try contracting her muscles while talk-



ing. Knowing how to hold a steady contraction while talking allows her to advance to the needed skill of holding during a hard cough or sneeze. Finally, a woman must develop the habit of quickly contracting her pelvic floor muscles with every cough, sneeze, lift, or urgency sensation that she wishes to delay.

# Pelvic Floor Disorders Research Update

The University of Michigan Health System Pelvic Floor Research Group is currently undertaking a number of studies to improve the understanding and treatment of pelvic floor disorders. The following two studies are currently recruiting women:

## Do Women with Prolapse Have Levator Ani Impairment?

This study is recruiting women with and without pelvic organ prolapse to determine if damage to the levator ani muscle, which elevates the pelvic floor, is more common among

women with organ prolapse. **If you are interested in being involved in this study, please call (734) 615-5120, or 1-800-742-2300, Ext. 2212, or E-mail [DPAL@umich.edu](mailto:DPAL@umich.edu).**

## Urinary Incontinence Prevention: Reducing Birth Risk


This is a randomized trial of pregnant women in which women are assigned to different strategies to reduce the likelihood of developing stress incontinence after delivery.

**If you are pregnant and interested in being involved in this study, please call (734) 764-4545, E-mail**

**[UMPERL@umich.edu](mailto:UMPERL@umich.edu) or access our website at [www.umich.edu/~umperl](http://www.umich.edu/~umperl).**

If you are interested in participating in other research studies regarding women's health issues, please sign up for the University of Michigan Women's Health Registry. Whether it's by filling out surveys or volunteering for research, you'll be helping to improve health care for all women.

**For more information or to sign up for the University of Michigan Women's Health Registry, please call 1-877-220-0694 or visit our website at [www.womenshealthregistry.org](http://www.womenshealthregistry.org).**




WHAT WE KNOW ABOUT WOMEN'S HEALTH COULD FILL A BOOK.

WHAT WE NEED TO FILL IS A LIBRARY.

The University of Michigan Health System is dedicated to solving women's health issues. And you can help. By volunteering for our Women's Health Registry, you give us the opportunity to learn about all kinds of women's health issues. Whether it's filling out surveys or volunteering for research, you'll be helping to improve health care for all women. For more information about the University of Michigan Women's Health Registry, please call 1-877-220-0694 or visit us at [www.med.umich.edu/whrc](http://www.med.umich.edu/whrc).

Women's Health Program



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