The federal government awards millions of dollars each year to conduct spinal cord injury (SCI) research. These "grants" are used by universities and organizations throughout the United States (US) to conduct research activities that have the potential to improve the quality of life for individuals with SCI.

The success or failure of most research activities is published in professional medical journals. These articles allow researchers to report their findings to other researchers. This way, they can avoid repeating activities that fail and build upon research that is successful. As an individual with SCI, you are likely to live a much longer, healthier life because of improvements in medical treatments gained through research.

Most results from SCI research have been published since 1966. In all, there have been well over 14,000 SCI related articles published in major medical journals over the past 40 years. Some articles reported findings from animal research, but most articles have reported research results on a group of people with SCI or a single case report of an individual with SCI.

Although most SCI research includes both men and women as participants, some gender-specific research is needed for unique health and wellness issues. For example, men and women have different sexual, reproductive, cardiovascular issues and many other different health and wellness concerns. Therefore, some research is needed to study issues that only impact men, and some research is needed on issues that only impact women.

Are women "fairly" represented in SCI research? One way to answer this question is to look at the total number of published articles that include information limited to either women or men. Because women represent at least 25% of the total SCI population, it is "fair" to think that about 25% of these articles report on information limited to women. Because men represent about 75% of all individuals with SCI, it is "fair" to assume that about 75% of such articles report on information related to men.

However, the reality of research activities is alarming for women with SCI. The Table breaks down the articles published in major...
However, there is really no good reason for the lack of research when it comes right down to the facts. There are more men with SCI than women, but there are more than enough women available to participate in research. It may be difficult for one facility to enroll enough participants to accurately represent the total population of women with SCI, but two or more facilities could collaborate to get enough participants for a valid study.

If there is to be a "fair" amount of research devoted to women's issues, it is up to women with SCI to make it happen. Researchers and funding agencies have been aware for a long time that there is a lack of research into women's issues. If you look at the table and graph, there has not been an increase in the percentage of research devoted solely to women's issues in the last 13 years. To increase the number of research activities for women with SCI, women need to call upon researchers and funding agencies to make women's issues a priority. You can start by contacting universities and organizations that conduct SCI research. There is a good chance that research is probably being done in the same center where you did your rehabilitation. You can contact funding agencies such as the Centers for Disease Control and Prevention, Paralyzed Veterans of America, and the National Institute on Disability and Rehabilitation Research, which funds this newsletter. You can also contact your representatives in the US congress. No matter who you contact, ask them to increase funding for research into the unique health and wellness issues for women with SCI. (see Resources on page 8)

If you are a woman with SCI, you can also help yourself by getting involved in research, if you are not already participating. You can participate in research that includes both men and women, and you can participate in research activities that only impact women. One thing is a fact: your participation will make a difference!

A
though it is clear that women are not "fairly" represented in SCI research when compared to men, the reason for the lack of research is not as clear. For the most part, researchers probably find it difficult to get enough women to participate in a study to accurately represent the total population of women with SCI. In other words, it is simply easier for researchers to get men to participate in research because there are more men with SCI than women.

<table>
<thead>
<tr>
<th>Limited to Gender</th>
<th>Years</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>1966 - 1969</td>
<td>0</td>
<td>115</td>
</tr>
<tr>
<td>433</td>
<td>1970 - 1979</td>
<td>5</td>
<td>428</td>
</tr>
<tr>
<td>662</td>
<td>1980 - 1989</td>
<td>10</td>
<td>652</td>
</tr>
<tr>
<td>1053</td>
<td>1990 - 1999</td>
<td>49</td>
<td>1004</td>
</tr>
<tr>
<td>363</td>
<td>2000 - Pres.</td>
<td>17</td>
<td>346</td>
</tr>
<tr>
<td><strong>2,626</strong></td>
<td><strong>Totals</strong></td>
<td><strong>81</strong></td>
<td><strong>2,545</strong></td>
</tr>
</tbody>
</table>
I keep getting urinary tract infections. What can I do?

Many individuals with spinal cord injury (SCI) who are taking antibiotics for urinary tract infection (UTI) should not! Bacteria cause UTI, but it is normal for about 80% of individuals with SCI to have bacteria in their urine that can be identified by a urine test. In fact, it is not recommended that you take antibiotics simply because your urine is cloudy, smells badly or even if your urine test is positive for bacteria.

Instead, it is recommended that you take antibiotics for a UTI mainly when you experience one or more symptoms of illness. These symptoms include fever, chills, headache, nausea, increased muscle spasms and autonomic dysreflexia (AD). Depending on your level of injury, you may feel burning while urinating and/or discomfort in the lower back, pelvic area or abdomen.

If you have symptoms of illness, it is recommended that your doctor get a urine sample before giving antibiotics. The urine must be taken directly as a "clean" catch or from a catheter. The sample should not come from a leg bag unless the bag, tube, and condom are new. Then, the urine specimen must be sent to a lab within 1/2 hour after collection. The test results allow your doctor to 1) confirm that you have a UTI and not some other problem and 2) prescribe the best antibiotic to kill the bacteria that is causing your UTI.

If you have a UTI, you should always take the antibiotic exactly as prescribed by your doctor. Do not stop taking the medication simply because you no longer feel sick. It is essential that you totally kill the bacteria to keep them from becoming immune to the antibiotic, which makes them much harder to kill in the future.

You can also take steps to help prevent infections and the spread of bacteria. First, keep your urinary supplies (leg bag, bed bag, catheters, etc.) clean. You can use so called "clean" catheters for intermittent catheterization. You can stop drinking beverages with sugar, caffeine and alcohol because they limit the production of urine. Instead, you want to drink more water and empty your bladder more often to help wash out the bacteria.

Finally, if you have more than one or two urinary tract infections per year and become ill, it can be an early sign of other problems with the urinary system. It is highly recommended that you have a urologic exam once a year to see that your urinary system is healthy. This usually includes a renal scan or ultrasound to help identify whether the kidneys are working properly. The exam may also include an X-ray of the abdomen that can detect kidney or bladder stones.

Is menopause the same for women with spinal cord injury (SCI) as it is for other women?

There is evidence to suggest that some women experience early onset of menopause after spinal cord injury, but this is an issue that needs further research. When you experience menopause, you can expect symptoms (hot flashes, mood swings, sleepiness, vaginal dryness, or night sweats) similar to all women. These symptoms have been known to last for years. However, you should talk to your doctor when you first experience symptoms of menopause because some symptoms can be a sign of other health concerns such as pregnancy or AD.

If symptoms interfere with your quality of life, talk to your doctor about treatment options. You might simply need to wear light, loose-fitting clothes or change your eating and/or exercise habits to reduce the impact of symptoms. If you continue to have problems, you can talk to your doctor about Hormone Replacement Therapy (HRT). There has been some recent research linking some forms of HRT (estrogen plus progestin) to an increased risk for health problems such as breast cancer, stroke, heart attacks and blood clots. However, HRT does have benefits. Each woman’s risk is different, so it is up to you and your doctor as to what treatment is right for you. If you receive HRT, make sure that you visit your doctor at least once a year to re-evaluate your treatment options and stay up-to-date on ongoing research.

SCI InoSheet #11 on Bladder Care and Management is available FREE at www.spinalcord.uab.edu. If you do not have Internet Access, call 205-934-3283.
5 Years of Work in Spinal Cord Injury

In October of 1998, the University of Alabama at Birmingham again received federal funds for the Rehabilitation Research and Training Center (UAB-RRTC). In addition to conducting spinal cord injury (SCI) research, the UAB-RRTC offers training and dissemination activities to promote knowledge gained from research activities. The 5 year funding period of the current UAB-RRTC ends on September 30, 2003.

This is a consumer report of the ongoing research, training and dissemination activities since the start of funding. The activities included in this report focus on secondary conditions of SCI. A “secondary condition” refers to medical complications or social issues that can occur as a result of living with SCI and impacts quality of life. Some examples of medical conditions include pressure sores, respiratory illness, pain, muscle spasms, urinary tract infection, depression, sexual function and fertility. Some examples of social issues include adjustment to SCI, sexuality, parenting, employment, physical activity and community interaction. In addition, the UAB-RRTC has put an emphasis on information regarding women’s issues. This report concludes on page 7 with details on how to obtain additional information on the contents of this report.

Research

The UAB-RRTC has conducted 9 research activities since 1998. Only one activity (#8) is not completed. These activities reflect an on-going trend from hospital-based to community-based methods to improve the health and well-being of caregivers and individuals with SCI.

(♦ = research outcomes; ■ = outcome not yet available)

1 Effect of Cranberry Pills on Bacteriuria and Pyuria in Persons with Neurogenic Bladder Secondary to SCI
♦ Cranberry pills are no better than placebo in reducing the number and type of bacteria in bladder and number of leukocytes (see Page 6).

2 Problem Solving Intervention with Video Teleconferencing Technology for Caregivers and Individuals with SCI
♦ It is possible to provide low-cost problem solving training to caregivers.
♦ Methods have been developed and published describing ways to incorporate consumer knowledge/needs into training materials.

3 Diagnosis and Treatment of Sleep Apnea in Chronic High Thoracic and Cervical SCI
♦ A questionnaire modified for SCI is likely an accurate predictor of sleep apnea.
♦ Non-accessible sleep labs are likely major barriers to treatment.
♦ Home-based diagnostic tests need to be evaluated (and paid for by insurance) to improve treatment access for growing number of apnea in individuals with high thoracic and cervical injuries.

4 Evaluation of Interventions to Prevent and Treat Urinary Tract Complications in Individuals with SCI
♦ The type of urinary drainage is not an important risk factor in developing kidney stones.
♦ People with indwelling catheters are at greater risk for developing bladder stones when compared to condom and intermittent catheters.
♦ Risk for urinary stones seems to depend upon where people live in the United States.
♦ It does not appear that drinking milk increases the risk of urinary stones.
♦ The type of stone removal technique does not influence risk of stone recurrence; given high rate of recurrence, individuals with SCI need to continue to be monitored annually.

5 Pain Following SCI: Classification, Treatment and Risk Models
♦ Donovan, International Association for the Study of Pain® (IASP®) and Trunk’s classification schemes are not reliable in their current state.
♦ More development is needed on the IASP-proposed standardized to make it a more reliable for the classification of SCI pain.
♦ A person’s verbal description of pain may not be very effective in determining a subtype of SCI pain, which is contrary to other research.
♦ Research is needed on the broad subcategories of neuropathic and musculoskeletal pain.

6 Urinary Dilution, Drinking Water Hardness, Beverage Use and the Risk of Urinary Stones in Individuals with SCI
♦ Risk models for development of urinary stones are developed and published.
♦ Stone formation occurs more often in persons who are Caucasian, smokers, have lower body mass index, higher urine specific gravity, indwelling catheter and worse renal function.

7 Computerized Risk Instrument for Assessing Secondary Conditions
Secondary conditions risk assessment and improvement modules have been developed and revised.

8 Immunogenicity of Pneumococcal (pneumonia) Vaccine in Individuals with SCI: Part II - Duration of Protective Antibody and Effect of Revaccination

♦ Individuals with SCI get significant health benefits from the pneumonia vaccine.
♦ Vaccination is recommended before patients are discharged from hospital after initial injury.
■ It is yet to be determined if the time between revaccination for individuals with SCI should be sooner or later than the 5 years recommended for the general population.

9 Weight Management and Wellness for Individuals with SCI: Modification of the EatRight® Program
♦ EatRight program was revised and piloted for individuals with SCI.
♦ Proper combination of diet, exercise with behavioral techniques are successful for weight loss.

Training

Over the last 5 years, the UAB-RRTC has been a major contributor to the education of students and professionals within the UAB Department of Physical Medicine and Rehabilitation (PM&R). Training and development activities have helped educate 12 psychology and 10 pre-doctoral students interested in rehabilitation research. 4 medical doctors and 11 researchers were provided with post-doctoral fellowships for specialized training in spinal cord injury medicine and rehabilitation research. In addition, the UAB-RRTC has contributed to the education of 32 physician residents.

Training activities have also extended beyond the Department of PM&R. The UAB-RRTC has contributed to the education of professionals working in SCI through 2 conferences. The 1999 conference on Secondary Conditions Among People from Minority Cultures helped to bring awareness and recommendations for improving the health of minorities. The 2002 “State of the Science” Conference summarized the progress of research on selected secondary conditions of SCI. In total, about 225 professionals attended these 2 conferences, and 2 proceedings were published summarizing the conferences.

The UAB-RRTC has offered 9 teleconferences and conferences to improve the knowledge of individuals with SCI, their families, and community service providers. A total of 6 teleconferences have been held over the last 5 years; 3 were for professionals and 3 for consumers. In 2000 and 2002, experts from the UAB-RRTC collaborated with the Alabama Department of Rehabilitation Services to educate state nurses, counselors and case managers on issues of SCI. In 2001, the UAB-RRTC hosted a consumer conference and another is planned for this July (see page 8 for the announcement on the 2003 SCI Information Day for consumers). It is estimated that at least 100 consumers and 300 professionals attended these events.

The faculty and staff of the UAB-RRTC have conducted over 100 presentations in the form of lectures, courses and posters since October 1, 1998. In total, these presentations have reached at least 15,000 professionals and consumers.

Dissemination

The UAB-RRTC incorporates a range of dissemination methods. The purpose of dissemination is to make sure that information on secondary conditions of SCI reaches people who can use the information. The UAB-RRTC uses three primary dissemination methods to reach individuals with SCI and their families.

1. Email Distribution List: there are currently over 1,500 people who receive email notifications when new and updated information is produced by the UAB-RRTC.
2. Mailing Database: there are about 3,500 consumers and professionals who receive mailings.
3. SPINALCORD Injury Information Network: this website is probably the best method for most people to get information on SCI. Everything written by the UAB-RRTC is available free on this website, which is accessed more than 1,700 times per day.

The UAB-RRTC provides written information for individuals with SCI and their families. The majority of SCI information is provided in newsletters. Research Update is an annual newsletter that offers an easy-to-read look into one specific research project. The methodologies and results are discussed to better give readers an understanding of how research is conducted. Research Review is another newsletter that discusses the current state of research in a specific area. For example, the most recent newsletter (March, 2003) outlines the current state of research in osteoporosis and SCI. Pushin’ On is devoted to improving the lives of people living with SCI. This newsletter provides

continued on page 7
In 1998, the University of Alabama at Birmingham received federal funds for the Rehabilitation Research and Training Center (UAB-RRTC) on Secondary Conditions of Spinal Cord Injury. One of the purposes of the UAB-RRTC is to conduct research and provide a means for dissemination of research results. Results from these research activities are now available.

One area of research focus includes urological issues to improve the general health and well-being of individuals with spinal cord injury (SCI). Over the years, there has been a lot said about the use of cranberry juice to treat and reduce the incidence of urinary tract infection (UTI). However, there was no previous research activities to test this theory in individuals with SCI.

The source of UTI is bacteria. Bacteria are a group or colony of tiny, microscopic single-celled life forms that live in the body. These bacteria can quickly multiply and lead to disease or infection.

It is normal for most individuals with SCI to have bacteria in their urine that can be identified by a urine culture. However, the bacteria are usually not considered a medical problem unless the individual shows signs or symptoms of illness. This study is important because the presence of bacteria puts individuals with SCI at an increased risk for developing UTI. In fact, complications due to UTI are the #1 medical concern and more likely to affect the overall health and health care costs of individuals with SCI.

Objective

This research project looked at the effectiveness of cranberry pills to reduce or kill bacteria found in the urine of individuals with SCI.

Participants

All participants in this study were individuals with SCI who were living at home, more than 1 year post injury and managing their neurogenic bladder through intermittent catheterization or condom catheter. Participants did not receive antibiotics for 7 days prior to enrollment, and they could not take antibiotics, drink cranberry juice, or do anything to prevent a UTI during their participation in this study.

Methods

Each participant was randomly placed into 1 of 2 groups. One group was given a pill with the cranberry extract, and the other group was given a placebo (sugar) pill. A laboratory test verified that the cranberry abstract contained the presumed active ingredient of cranberry juice. Participants were asked to take 2 pills in the morning and 2 pills at night with water for 6 months. Neither the researchers nor participants knew who was taking the cranberry extract or placebo.

Participants provided urine samples at the time of the initial clinic visit and monthly for 6 months. Microbiological data were evaluated using analysis of variance with repeated measures. All participants showed more than 10,000 bacterial colonies per milliliter of urine when first enrolled in the study.

Results

There were 23 individuals with SCI who received the cranberry extract while another 20 individuals with SCI received placebo. There were no differences or trends detected over time between the two groups with respect to number of urine specimens with 10,000 bacteria colonies per milliliter, types and numbers of different bacterial species, numbers of urinary leukocyte counts or urinary pH.

Conclusion

This study did not show that cranberry pills offer any benefit in reducing the number of bacteria in the urine of individuals with spinal cord injury.
a mix of information on medical and social issues. It is published twice a year and mailed free of charge to individuals with SCI and their families. The UAB-RRTC offers a series of SCI InfoSheets designed to educate both consumers and professionals. Over the past 5 years, 3 new InfoSheets have been added to the series and 10 have been updated.

The dissemination of UAB-RRTC written materials is further accomplished through a number of outside sources. For example, there are currently at least 10 rehabilitation facilities, service agencies and advocacy groups using UAB-RRTC information for patient, family and staff education. The faculty and staff of the UAB-RRTC has produced 68 published articles and 13 book chapters. It is very hard to estimate the number of people who have read this information, but it is easily estimated to be well over 100,000 people.

**Technical Assistance**

Another key function of the UAB-RRTC is to respond to information requests from consumers and professionals. Most requests are from people wanting to know where to find some type of information on SCI. Some requests are for statistical information. No matter what the request, the UAB-RRTC either provides the information or directs the person where to best find the information. On average, the UAB-RRTC responds each month to about 25 requests for information by phone, 50 by email and 3 letters.

**Location of SCI Information**

**Women's Issues**
http://www.spinalcord.uab.edu/show.asp?durki=56785
http://www.spinalcord.uab.edu/show.asp?durki=51288
http://www.spinalcord.uab.edu/show.asp?durki=47805
http://www.spinalcord.uab.edu/show.asp?durki=41588
http://www.spinalcord.uab.edu/show.asp?durki=26976
http://www.spinalcord.uab.edu/show.asp?durki=32073
http://www.spinalcord.uab.edu/show.asp?durki=26971
http://www.spinalcord.uab.edu/show.asp?durki=32375

**SCI InfoSheets**
http://www.spinalcord.uab.edu/show.asp?durki=21479

**Pushin' On**
http://www.spinalcord.uab.edu/show.asp?durki=21396

**Research Reviews**
http://www.spinalcord.uab.edu/show.asp?durki=19803

**Research Updates**
http://www.spinalcord.uab.edu/show.asp?durki=19805

**SCI Teleconferences**
http://www.spinalcord.uab.edu/show.asp?durki=25637
http://www.spinalcord.uab.edu/show.asp?durki=25896
http://www.spinalcord.uab.edu/show.asp?durki=51936

**Research Activities**
Project #2
http://www.spinalcord.uab.edu/show.asp?durki=36068
Project #4
http://www.spinalcord.uab.edu/show.asp?durki=28130
Project #5
http://www.spinalcord.uab.edu/show.asp?durki=51937
Project #6
http://www.spinalcord.uab.edu/show.asp?durki=39091
Project #8
http://www.spinalcord.uab.edu/show.asp?durki=28227
Project #9
http://www.spinalcord.uab.edu/show.asp?durki=22633

For information on UAB-RRTC research or to receive written materials, go to [www.spinalcord.uab.edu](http://www.spinalcord.uab.edu) or call the Office of Research Services at 205-934-3283.
Join the SCI Email Distribution and be notified via email as new and updated SCI material from UAB becomes available; email scitrce@sun.rehabm.uab.edu and type, "subscribe to SCI email distribution list" in the subject line.

UAB is asking women with SCI/D to participate in a study concerning the impact of physical limitation on cardiovascular health. Women who participate will receive $250. For more details, contact Carol Adams at 205-934-6991 or email cgdadams@uab.edu.

Individuals with chronic neuropathic pain after SCI can help evaluate the effectiveness of several instruments used to measure the outcome of treatments. Participants will be interviewed twice by telephone and need to answer questions related to their current pain level (you might be eligible even if you have no pain), sleep pattern, level of emotional distress, and perception of quality of life. Personal care attendants are also needed to participate in one similar telephone interview. All interviews will take less than 30 minutes, and all participants will get $25 for each telephone interview. Call Amanda Dillon at 205-934-3345 or adillon@uab.edu for more information.

Hormone Replacement Therapy
www.4woman.gov/HRT/
www.acog.org/from_home/publications/press_releases/nr08-30-02.cfm

Pushin’ On is published twice a year and provides information on spinal cord injury (SCI) to individuals with SCI, their family, and rehabilitation service providers. It is distributed free of charge. Reprints are permitted with prior approval. Alternate formats available on request.

Pushin’ On is published twice a year by the University of Alabama at Birmingham (UAB) Rehabilitation Research and Training Center on Secondary Conditions of SCI and the Model SCI Care System, supported by grants #H133B980016 and #H133N000016 from the National Institute of Disability and Rehabilitation Research, Office of Special Education and Rehabilitative Services, US Department of Education, Washington, DC. Opinions expressed are not necessarily those of the granting agency. The RR TC and Model System are directed by Amie B. Jackson, MD within the Department of Physical Medicine & Rehabilitation at Spain Rehabilitation Center.

Editor: Phil Klebine, MA
The University of Alabama at Birmingham provides equal opportunity in education and employment. © 2003 Board of Trustees, University of AL

Contact Information:
Office of Research Services
619 19th Street South - SRC 529
Birmingham, AL 35249-7330
Phone: 205-934-3283 or TDD 205-934-4642
Fax: 205-975-4691
Email: scitrce@sun.rehabm.uab.edu

SCI Information Day
Come hear UAB speakers Saturday, July 19th discuss the latest information on conditions that make a difference in the lives of persons with SCI and families. Then, eat lunch and meet with community representatives providing information on recreational activities, equipment, independent living services, current back-to-work incentives and more!
09:15-09:55 Skin Care/Pressure Sores
10:00-10:40 Joint Problems
11:00-11:40 Bladder & Bowel Management
11:45-12:20 Nutrition/Weight Management
12:20- Lunch/View Community Display Tables

You must Pre-register before July 11, 2003
Cost is $3 per person
(if you can attend but cannot pay $3, call about $3 waiver)
Call 205-934-3283

Pushin’ On and links to other information on spinal cord injury can be found on the SCI Information Network web site at www.spinalcord.uab.edu.

Resources

SCI Research Funding Sources
www.pva.org
www.cdc.gov
www.ed.gov/offices/OSERS/NIDRR/

Women’s Health
www.pregnancy.org
www.lookingglass.org
www.bcm.tmc.edu/crowd
www.disabledparents.net/index.html

Urinary Tract Infection
www.spinalcord.uab.edu/show.asp?durki=21556

OFFICE OF RESEARCH SERVICES
UB - SPAIN REHABILITATION CENTER
619 19TH STREET SOUTH - SRC 529
BIRMINGHAM, AL 35249-7330

RETURN SERVICE REQUESTED

US Congress
www.congress.org

NONPROFIT ORG. U.S. POSTAGE PAID PERMIT NO. 1256 BIRMINGHAM, AL