PSC Partners Seeking a Cure

Newsletter

Vol. 1, Issue 10, December 2005

Edited by David Rhodes and Ricky Safer

www.pscpartners.org

Working together to provide research, education, and support for people affected by Primary Sclerosing Cholangitis

In This Issue:

- Meet the Board: Dr. Gregory T. Everson & Ricky Safer p. 1
- Meet the Board: David Rhodes, Dike Ajiri, Deborah Wente, Chris Klug, Lee Bria & Elissa Deitch p. 2
- Update On Upcoming Conference In Pittsburgh p. 3
- Invitation to Participate in PSC Research in California p. 4
- It Was a Very Good Year p. 5-6
- PSC Partners Seeking a Cure: Treasurer's Report p. 6
- Fundraising Update p. 6
- Autoimmune Disease Articles: Focus on Celiac Disease p. 7-8
- Update on Inflammatory Bowel Disease Genetics p. 8
- Update on Donations to PSC Partners Seeking a Cure p. 9-10
- The Twelve Days of Christmas and Hannukah p. 11
- Laughter is the Best Medicine p. 11
- Chris Klug Foundation p. 11
- Nine Ways to Reduce the Risk of Colon Cancer p. 12-14
- Poetry Corner p. 14
- Making Donations to PSC Partners Seeking a Cure p. 15
- Additional Contact Information p. 15
- Submitting Newsletter Articles p. 15
- Quotations p. 15
- Give Life p. 15
- Note to Readers p. 15

PSC Partners Seeking a Cure Board Members:

Dike Ajiri, Lee Bria, Elissa Deitch, Dr. Gregory Everson, Chris Klug, David Rhodes, Ricky Safer, and Deb Wente

We begin this issue with brief biographies of each of the Board members:

Meet the Board:

Dr. Gregory T. Everson

Dr. Everson received his M.D. degree from Cornell Medical College, NY, NY, in 1976. He is currently a Professor of Medicine and Director of Hepatology in the Division of Gastroenterology & Hepatology, Department of Internal Medicine, at the University of Colorado. Dr. Everson is a recipient of both NIH and industry-sponsored research grants and contracts to study liver disease, liver transplantation, and treat patients with hepatitis C. He is principal investigator of the NIH-sponsored HALT C trial and co-investigator of the NIH-sponsored A2ALL study of Living Donor Liver Transplantation at the University of Colorado Health Sciences Center. He is an author and contributor to over 300 scientific and clinical publications related to hepatitis C, liver transplantation, and liver disease and has been an invited lecturer for local, regional, national and international meetings. Dr. Everson is a member in good standing of the American College of Physicians (fellow), American Gastroenterologic Association, American Association for the Study of Liver Disease, International Liver Transplant Society, and the American Society of Transplantation. He is past Associate Editor of Liver Transplantation and Journal of Lipid Research, and reviewer for numerous scientific and medical journals.

For additional information about Dr. Everson, please see:
http://www.uchsc.edu/sm/deptmed/ResearchSyllabus/everson.htm

Ricky Safer

After having led the life of a health nut for decades, I was shocked to receive my PSC diagnosis two and a half years ago and then to discover that there was little information or support available. My years of volunteering with CCFA locally and nationally (due to my son's ulcerative colitis diagnosis) and my position on the board of the Donor Awareness Council have provided me the background to get PSC Partners Seeking a Cure off the ground. I am so lucky to have my family as my loyal support group and constant helpers: my husband Don, an endodontist, my daughter Elissa, her husband Steve, their edible son Sam, my son Adam and his wife Sue. In my other life, I teach foreign languages and do cross-cultural training part-time at the University of Denver. I received my BA from the University of Michigan, and my Master's Degree from Johns Hopkins University.

Meet the Board:

David Rhodes

David Rhodes received both his B.Sc. and Ph.D. degrees from Manchester University, Manchester, England. He obtained his BSc. degree in Botany in 1973, and his Ph.D. degree in Plant Physiology/Biochemistry in 1976. He is currently a Professor in the Department of Horticulture and Landscape Architecture at Purdue University, West Lafayette, IN. Currently his research is focused on understanding the bichemistry of floral scent, and the use of isotopes to study metabolism in plant cells. He has published over 70 research papers in scientific journals, and has co-authored 16 book chapters. He has been a recipient of NSF, DOE and USDA research grants. He has served as reviewer for numerous scientific journals, and grant proposals. He is a member of American Society of Plant Physiologists and American Association for the Advancement of Science. He teaches 4 courses at Purdue University: HORT410 - Vegetable Crops, HORT590S - Plant Environmental Stress Physiology, HORT603 - Grants and Grantsmanship, and HORT640 - Metabolic Plant Physiology. For additional information about David Rhodes see: **http://www.hort.purdue.edu/rhodcv/index.htm**.

He became involved with **PSC Partners Seeking a Cure** because his son was diagnosed with PSC in 2003. Together with his wife, Judy, he maintains the PSC Literature (**www.psc-literature.org**) and PSC Partners Seeking a Cure (**www.pscpartners.org**) web sites, and is co-editor of the PSC Partners Seeking a Cure newsletter.

Dike Ajiri

As Chief Executive Officer of Mobile Doctors, I head the operations team and oversee the evaluation, integration and ongoing management of all affiliated practices. Prior to Mobile Doctors, I was the Director of Marketing/Public Relations for Parke Home Health Care in Cincinnati. I received my Bachelor of Science Degree in Business/Entrepreneurship from Miami University in Ohio, and I have taken Masters in Business Adminstration classes at Wayne State University. I was diagnosed with PSC in 2002, and I want to live long enough to be cured. That's why I'm on the board. I have a wife Rilee and an infant son Jaxon. I enjoy playing tennis and still play a rugby game every now and then.

Deborah Wente

I'm Deborah Wente. Our 11 year old daughter was diagnosed with PSC in August, 2004 through an ERCP. She is totally asymptomatic at this point. Fortunately, I quickly found the online support group and am honored to be a part of such an active, knowledgeable, caring group of people. I have an undergraduate degree in French and spent a couple of years living in France in my 20s. As the French degree was not particularly marketable, I returned to school and received my MBA from the University of Chicago. Most recently, I managed a division of my family's plastic manufacturing business. I had full profit and loss responsibility, sales of around $50 million and 100 employees. We have since sold the company and I am fortunate enough to be able to stay home with our two daughters, Kristin, 12 and Samantha, 11. I continue to be very involved in our community. I am on the board of Lakeland College, the John Michael Kohler Art Center and Sheboygan County Junior Achievement. I am a member of Rotary International, a Junior Achievement classroom volunteer and a Girl Scout leader for two troops. I have been married to my husband, John, for 17 years and we live in Sheboygan, WI.

Chris Klug

I'm a local of Aspen, Colorado, and a liver transplant recipient due to PSC. I'm the first-ever transplant recipient Olympic Medalist. I'm currently training and racing in hopes of returning to my third Winter Olympics and Gold Medal victory in snowboarding.

Lee Bria

Lee Bria was working as a Chest Physical Therapist at Massachussetts General Hospital when she met her husband Bill, a pulmonary physician. Lee and Bill have two sons and moved to Michigan in 1991. In June 2004, they were devastated when their son Bill was diagnosed with UC/PSC. He was just ending his junior year of college. Lee also lectured on weight loss for Weight Watchers, but is no longer working, as she devotes all her efforts to the foundation. Lee received a BS degree from Quinnipiac University and she is a registered physical therapist.

Elissa Deitch

Elissa Safer Deitch helped start PSC Partners Seeking a Cure when her mom, Ricky Safer, was diagnosed with PSC in 2003. Elissa is an attorney, and is currently practicing with a law firm in Denver, Colorado. She graduated from Middlebury College, and got her law degree from the University of Virginia. Elissa has practiced corporate law for eight years, and has worked with numerous non-profits. In her free time, Elissa enjoys spending time with her family (including her 18 month old son Sam), traveling and skiing.

Update On Upcoming Conference In Pittsburgh

We are all looking forward to our second annual international conference for PSCers and their caregivers which will take place in Pittsburgh from April 7-9, 2006. Joanne Grieme is firming up plans for the weekend, and it is guaranteed to be a phenomenal experience for all of us who will be able to attend. In early January, we will post the final details of the conference on our website and on the online support group, and registration will begin. The Standard Registration fee (before March 7, 2006) will be $160 per person, or $300 per couple. The Late Registration fee (after March 7, 2006) will be $180 per person, or $340 per couple. The registration fee covers registration for the talks, breakfasts and lunches.

If you are planning to attend, but you haven't made your reservations at the hotel, please reserve now by contacting the Pittsburgh Marriott City Center online at **http://www.stayatmarriott.com/PSC** or by calling 1 800 228-9290 and asking for the special group rate with our group code PPSPPSA. We have set aside a block of rooms at the special group rate of $89 per room per night. Once our block of rooms is filled, the Marriott will try to extend the special rate, but they can't promise this, so please reserve soon if you plan on coming. The tentative weekend schedule looks like this:

Friday April 7:

- 5:00 - 7:30 pm: Registration and Reception

Saturday April 8:

- Continental Breakfast (7:30-8:00 am)
- Opening Remarks (8:00-8:15 am) : Don & Ricky Safer
- Presentation One (8:15-8:35 am) : Keynote Speaker, Dr. Keith Lindor, Mayo Clinic, Rochester, MN: PSC - An Overview
- Presentation Two (8:35-8:55 am) : Dr. Adam Slivka - Endoscopic Management
- Presentation Three (8:55-9:15 am) : Dr. Nora Bergasa - Pruritus
- Question & Answer Panel (9:15-10:00 am) : Above Three Speakers
- Break (10:00-10:15 am)
- Presentation Four (10:15-10:35 am) : Tentative - IBD in PSC
- Presentation Five (10:35-10:55 am) : Dr. Shaw-Stiffel - Transplant Workup & Outcomes
- Presentation Six (10:55-11:15 am) : Dr. Kasum Tom - Liver Transplant
- Question & Answer Panel (11:15-12:00 pm) : Above Three Speakers
- Box Lunch (12:00-1:00 pm)
- Presentation Seven (1:00-1:20 pm) : Tentative - Osteoporosis in PSC Patients
- Presentation Eight (1:20-1:40 pm) : Dr. Laura Matarase - Nutrition
- Presentation Nine (1:40-2:00 pm) : David Rhodes - Update on PSC Research
- Question & Answer Panel (2:00-2:30 pm) : Above Three Speakers
- Break (2:30-2:45 pm)
- Breakout Sessions: Session 1 (2:45-3:15 pm) *Pick 1*
  - * Social Issues for Kids & young adults with PSC - Dr. Robert Noll, Children's Hospital
  - * Organ Referral - How the System Works - Nance Conney, Starzl Transplant Institute
- Breakout Sessions: Session 2 (3:15-3:45 pm) *Pick 1*
  - * Doctor/Patient Relations - Dr. Susan Zickmund - UPMC
  - * Stress Management - Highmark Blue Cross Blue Shield Representative
- Breakout Sessions: Session 3 (3:45-4:15 pm) *Pick 1*
  - * Meditation - Dorit Baurer
  - * Disability/Social Security - Glenn Sinko, Esq.
- Evening Reception (6:00-8:00 pm) : Speaker - Chris Klug, PSC Patient, Transplant Recipient, Olympic Medalist - To the Edge and Back

Sunday April 9:

- Continental Breakfast (8:00-8:30 am)
- Presentation (8:30-9:00 am) : Update on Dr. Chapman's Research, Ivor Sweigler, PSC UK Support Group
- Roundtable Discussions (9:00-10:15 am)
- Break (10:15-10:30 am)
- Roundtable Discussions (10:30-11:45 am)
- Closing Remarks (11:45-12:00 pm) : Don & Ricky Safer

Invitation to Participate in PSC Research in California

Dear PSC Patient,

Thank you for your interest in our PSC Patient Registry and DNA/ Serum Bank. We are off to a good start and your participation is vital to moving our research effort forward.

On **Saturday, January 7, 2006 at 10 AM until noon** we will be having an informational meeting about the research we are performing on PSC. It will also be a time to complete your enrollment in the registry if you have not already done so. This may require the drawing of a small amount of blood for DNA and serum. There will also be time to answer questions you may have about PSC and to hear from others about their experience with PSC.

The meeting will be held at the **Genome Sciences and Biomedical Facility** on the UC Davis campus (see map below).

We would also like to invite parents and siblings to come. They will be asked to participate in our research as a group of related individuals without PSC.

Please RSVP to Marcy Crees at 530-752-3285 or **mlcrees@ucdavis.edu**

I look forward to seeing you there.

Sincerely,

Christopher L. Bowlus, M.D.
Associate Professor

PSC PATIENT
RESEARCH MEETING

Saturday, January 7
10:00 am to Noon

Genome Sciences and Biomedical Facility
UC Davis Medical School

- Learn what we know about PSC
- Find out what we are doing to understand PSC
- Sign up for research and help us understand PSC

Please RSVP and get directions by contacting
Marcy Crees
530-752-3285
mlcrees@ucdavis.edu

* Family and friends are welcome

Directions to the Genome Biomedical Science Facility at UC Davis in Davis, CA

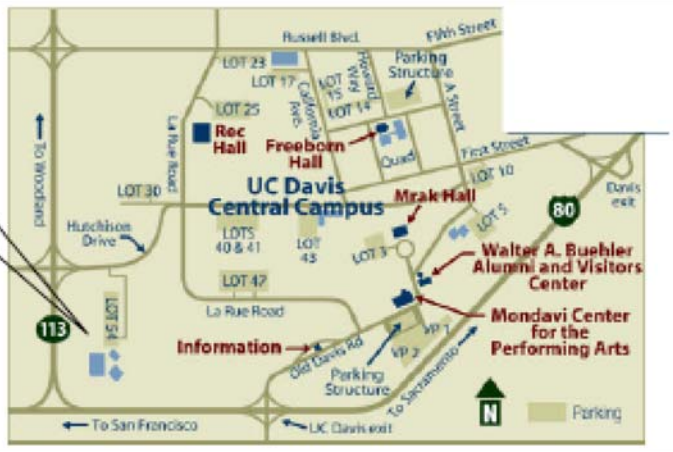
From I-80 east or west bound.

1. Exit I-80 on the HWY 113 NORTH toward Woodland. Get in the very far right lane.
2. Take the first exit-Hutchinson BLVD. Stay in the very right lane. This lane makes you turn right onto Health Sciences Drive. This all happens immediately off the exit.
3. At the stop sign turn RIGHT on to West Health Sciences Drive.
4. The road will turn to the left, follow it.
5. There is a parking lot to your left (Lot number 53) just past a construction site for a new building. Parking is free on weekends.
6. The Genome Biomedical Science Facility is the new 6-story building (the tallest building you see is the Genome building).
7. Enter the building through the front doors.
8. The auditorium is on your left.
9. If you have difficulties call me at 530-752-3285 or 530-752-3286.

If coming from Woodland the directions will be the same except when you take the Hutchinson exit off of HWY 113 south, turn left at the stop sign on the exit. Make sure and stay to the very right. Take the first right turn on the Health Sciences drive. Follow the directions from step 2 above.

Marcy Crees

Genome Biomedical Science Facility



IT WAS A VERY GOOD YEAR

As the end of the year holidays are upon us, I keep thinking about how far we've come in our first year of existence. In my present stream of consciousness frame of mind, here are some of our accomplishments:

- We offer a free online PSC literature site with over 32,000 abstracts covering all aspects of PSC and related diseases.
- We put out a free monthly online newsletter.
- Our informative website is constantly being updated, and we are receiving hits from all over the world.
- We've had our first successful conference for PSCers and caregivers, and we're planning our second conference in Pittsburgh on April 7-9, 2006.
- We have created a brochure entitled "Living with PSC", which is available to physicians, PSCers, family and friends, to educate everyone about our orphan disease.
- The membership of the PSC online support group (which existed long before our foundation), is growing by leaps and bounds. (It's sad that so many of us have been diagnosed with PSC, but it's wonderful that we can support each other.)
- We have numerous fundraising projects in place: wristbands, notecards, a CD from our conference, Krogers gift cards, AAA Environmental recycling, and a letter writing campaign.
- We continue to receive donations from individuals who want to help support our goals, especially funding research into the causes of and cure for PSC.
- We have a growing list of corporate and individual sponsors.
- We're putting together our Medical Scientific Advisory Committee, and they will start planning where and how to allocate our funds for PSC research.
- Individual members are working locally on organ donation awareness.
- We have some local support groups in the works. There is a functioning PSC support group in Connecticut, and we're about to launch PSC support groups in Denver and the San Francisco Bay area.
- We're working closely with Ivor Sweigler in the U.K. and co-ordinating our efforts in fighting PSC.
- We have made personal contacts with the major international PSC researchers and have let them know of our existence and our willingness to help their efforts in the future, both by providing volunteers and possible funding.
- On a personal level, all of us who are involved with the foundation are benefitting from the lasting friendships with so many supportive, understanding and compassionate PSCers and caregivers.

If you'd like to get involved or you'd like more information on any of our projects, please log on to our website at **www.pscpartners.org** or write to us at **pscpartners @yahoo.com**. We appreciate suggestions and help from all of you.

I'd like to briefly thank all our PSC partners who have helped our all-volunteer foundation grow so quickly.

- Dave Rhodes, our guru, who, with his wife Judy, created and continues to update the incredible PSC literature and PSC partners web sites. Dave also writes and publishes our monthly newsletter, and he produced the CD from our conference. We all benefit greatly from his brilliant and compassionate advice to all of us online.
- Lee Bria, our very enthusiastic fundraising chairperson, who is always coming up with new and creative ways to make money for the foundation. Lee has already put in place many successful fundraising projects and she has been the impetus for many individual and corporate donations.
- Elissa Deitch, our legal advisor, whom I call our "silent partner' because she works behind the scenes. Elissa did all the legal work to launch PSC Partners Seeking a Cure including completing the lengthy 501(c)3 application. On a weekly basis, she oversees all our operations and fundraising to make sure we're in complicance with the IRS.
- Dr. Gregory Everson, our Medical Advisor, whose expertise and advice helped us launch the foundation. Dr. Everson put together our superb group of speakers for our first annual conference here in Denver, and he always makes himself available to us.
- Deb Wente, our Treasurer, who donated Quickbooks and countless hours setting up our books, preparing financial statements, and keeping us in compliance with our 501(c)3 status.
- Joanne Grieme, who is hosting our 2006 conference in Pittsburgh. Joanne is doing an outstanding job planning all aspects of the conference. She has put together a remarkable group of speakers and a fantastic plan for the whole weekend.
- The chairpeople of our various projects:
  - Bill Wise and Dana Miletic - Wristband project
  - Ali Lingerfelt-Tait - Creator of the notecards and notecard project chairperson
  - Lee Bria - Krogers gift cards chairperson
  - Dave Rhodes - Creator of the conference CD and CD project chairman
  - Tim Wholey - AAA Environmental recycling project chairperson
  - Maria Martens - Letter writing project chairperson
  - Barb Henshaw - Brochure chairperson.
- Deb in VA and Dave Rhodes - Brochure writers.
- Jonathan and Tiffany - Moderators of the Yahoo online site.
- Reggie Belmont and Jennifer Soloway - Chairpeople of local PSC support groups.
- Sue Safer who has done all our graphic design work.
- Pat McBride of Envision Printing in Marietta, Georgia who donated the printing of our brochure and Shelley Hussey who connected us to Pat.
- Chris Klug, who is a hero to all of us and who graciously offers his help for all our projects. He's the "cover boy" on the front of our brochure, and he was a super motivational speaker at our April conference.
- Dike Ajiri, Lee Bria, Elissa Deitch, Dr. Gregory Everson, Chris Klug, David Rhodes, (Ricky Safer), and Deb Wente - our Board of Directors.
- Dr. Gregory Everson, Dr. James Trotter, Dr. Joel Levine, Dr. Igal Kam, Dr. Lisa Forman, Dr. Lisa Corbin, Georgeane Vigue, David Rhodes, Chris Klug, Dr. Aubrey Goldstein, and Ivor Sweigler - the speakers at our 2005 conference.
- Axcan Scandipharm, Procter and Gamble, Salix Pharmaceu-

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ticals, Citigroup, MFit at the University of Michigan, American Liver Foundation of Western Pennsylvania - our corporate sponsors.

- All our individual donors, who are too numerous to list, but who are noted in each edition of our newsletter.
- Alice Bennell, a teenager and PSCer from London, England, who created "Simple Gifts" to sell her handicrafts and who donated the proceeds to PSC Partners.
- Thanks to our brilliant and compassionate friend Shauna Saunders, in whose memory our foundation was launched. She showed us all how to live our lives to the fullest.
- Last, but certainly not least, my husband Don and my children Elissa and Adam and their spouses Steven and Sue, who offer constant encouragement, expertise, and advice.

I'm sorry if I have forgotten to mention some of our PSC partners. Without all of you, our foundation would not exist. We have come so far in our first year that it gives me great encouragement for our future. As Joanne Grieme reminds us: "Together in the fight, whatever it takes!." Thank you everyone. I really appreciate the warmth and encouragement that I receive from my new family. Here's to a very healthy and happy 2006 for all PSCers and their caregivers.

Ricky Safer

PSC Partners Seeking a Cure: Treasurer's Report

I am Deborah Wente and am very pleased to submit the first Treasurer's Report. I joined the Board of PSC Partners Seeking a Cure in July, 2005 and have taken on the responsibilities of Treasurer. My first task was to transfer all fundraising, donation and expense data into Quickbooks, the software program that we will use to track our ongoing financials. All data has been entered and reconciled to prior financial statements and to the bank statements. We are off to a great start!

The following comments are based on data from Jan - Oct, 2005.

Year to date revenue is $44,663.20. The biggest component of revenue is donations at $33,184.06. Fund raising activities have generated $4,769.47. These include Kroger's cards, notecard sales, silent auction items, raffle, ink cartridge recycling, CD sales, and wristbands. YTD the largest fund raising activity has been wristband sales generating $3,393.

The first conference was held in April, 2005. PSC Partners Seeking a Cure had income of $12,557.11 and expenses of $12,336.49 for a profit of $220.62.

Through October 2005, the PSC Partners Seeking a Cure Foundation has a net income of $38,147.42.

Full financial statements are available directly from me. You can email me at **debs_3@charter.net**.

We wish all our readers a very happy holiday season, and a healthy, joyous and productive New Year

Fundraising Update

Great news from Krogers and AAA Environmental Recycling.

Thank you Kroger shoppers !!! Together we are making a difference by using our Kroger cards. Every time we use our Kroger cards we help PSC Partners Seeking a Cure raise money for research. The foundation receives 5% of all grocery purchases – how easy is that? As of October we have made $724 just by buying groceries. Way to go everyone!

Krogers will send a check for $250 to the PSC Partners Seeking a Cure foundation when we reach a total of $ 5,000 worth of groceries sold. Wouldn't it be great if we could do this each month? Please help us meet this goal by recharging your card and by asking friends and relatives to buy and use one of our Kroger cards. They must be purchased through PSC Partners Seeking a Cure so that they are registered to us. Together we can do it! Thanks to all of you who are already doing your best to make a difference. To get your card, or for more information, contact me at **ldbria@comcast.net**.

Our AAA Environmental fundraiser is also starting to bring money to the foundation. Our first check was for only $21.14 but we are doing much better now and we expect this amount to grow steadily as we have more members handing out the plastic mailers. Our next quarter will reflect our efforts to recycle with a much better total. Thank you so much to everyone who has sent in an empty ink cartridge or an old cell phone. It is our combined efforts that make a difference. For more information contact Tim Wholey at **timwholey@cox.net** or call AAA Enviornmental at 1-866-332-2234 and tell them you want to help PSC Partners Seeking a Cure. This is also a totally free program and good for mother Earth too!

Have you sent out a corporate letter yet? This is something we can all help with. If you can help please contact Maria Martens at **mariapamom@comcast.net**. She will email you a copy of our corporate letter and then you will send it out and make one follow up phone call. We need to ask some of the larger corporations for help. If we don't ask, we won't receive.

Welcome to our new wristband chairperson Dana Miletic. Thanks Dana! If you need wristbands, you can order from our website **www.pscpartners.org**. We wish to thank Bill Wise for his time and energy spent as our past wristband chairperson. Thanks Bill and good luck in your new job.

Welcome also to our new brochure chairperson Barb Henshaw who will be helping to get our brochures into all the doctors offices dealing with PSC across the country. Thanks Barb !

We look forward to some new fundraisers coming up in 2006 and we will keep you posted as we get them ready. Thank you all for joining us in this fight to beat PSC.

I'm looking forward to meeting all of you who are helping our efforts in Pittsburgh!

Lee Bria

Autoimmune Disease Articles

Most autoimmune diseases are thought to be initiated by an environmental **trigger** in **genetically susceptible** individuals. For some autoimmune diseases the environmental triggers may be infectious agents; e.g. bacteria or viruses. In others, the triggers may be environmental toxins, or proteins found in the food supply. The disease process can often lead to the production of **autoantibodies;** these are sometimes useful for diagnosis, and sometimes are intimately involved in the pathogenesis of the disease. Often males and females will show different susceptibilities, and so a **gender** effect is often recognized. With these considerations in mind, we thought it would be useful to consider several individual autoimmune diseases, and identify the environmental triggers, where known, the genes thought to be involved, the autoantibodies associated with each autoimmune disease, and any gender differences that have been identified. We'll start this series of articles with a consideration of celiac disease, which is probably the best understood autoimmune disease. As we discuss each of the autoimmune diseases, we'll try to point out similarities and differences with PSC (primary sclerosing cholangitis) and inflammatory bowel diseases (IBD). We hope that this may reveal some of the overlaps between PSC/IBD and other autoimmune diseases, might provide clues about the triggers and genetic components of PSC/IBD, and might provide clues as to pathogenesis and treatment.

Focus on Celiac Disease

By David Rhodes

Overview of celiac disease: Celiac disease (also called coeliac disease, or celiac sprue, or gluten-sensitive enteropathy) is probably the best understood of the autoimmune diseases. It is caused by a sensitivity to the proteins (gluten) in certain grass seeds used to make many food products; primarily wheat, barley, and rye. Thus, the environmental 'trigger' for this disease is well characterized: peptides (short chains of amino acids) derived from the breakdown of gluten. The most effective treatment for this disease is maintenance of a gluten-free diet. Celiac disease is remarkably common, and is estimated to affect 0.5 to 1% of the population. Celiac disease is generally characterized by an atrophy of the villi of the intestines, and can be accompanied by diarrhea, fatty stools, abdominal pain and distention. The disease can result in malabsorption of nutrients, such as vitamins, folates, and iron. However, a large number of extraintestinal manifestations of the disease can also occur, including dermatitis herpetiformis (a skin rash), arthritis, neuropathy, and liver disease. Celiac disease patients seem to be at higher risk of other autoimmune diseases, including type 1 diabetes (T1D), multiple sclerosis (MS), primary biliary cirrhosis (PBC), autoimmune hepatitis (AIH), or PSC. The disease is usually diagnosed by serum antibody tests, an intestinal biopsy, and mitigation of symptoms following gluten withdrawal.

Antibodies: The disease is characterized by antibodies to a protein called transglutaminase 2. The enzyme transglutaminase 2 not only converts the gluten-derived peptides into forms that make them more immunogenic, but it also cross-links the immunogenic peptides with itself and other proteins. These cross-linked proteins appear to become the targets for auto-antibody production.

Genetic susceptibility: The genetic susceptibility to celiac disease is well characterized, but complex. One of the most important genetic determinants of susceptibility is a pair of genes in the major histocompatibility complex (MHC) in the human leukocyte antigen (HLA) class II region on the short arm of human chromosome 6. The pair of adjacent genes involved are the HLA-DQA1 and HLA-DQB1 genes (see yellow-highlighted region of the Table opposite). Certain variants (alleles) of these two genes are known to confer susceptibility to celiac disease. It is noteworthy that this same genetic region (although not necessarily the same gene variants) seems also to be important in a number of other autoimmune diseases. These include autoimmune hepatitis (AIH), alopecia aerata (AA), myasthenia gravis (MG), autoimmune polyglandular syndrome (APS), antiphospholipid syndrome (APLS), primary biliary cirrhosis (PBC), PSC, ulcerative colitis (UC),

Major genes in the HLA Class II region of the short arm of human chromosome 6, and their associations with various autoimmune diseases.

Gene	Diseases Associated:
BTNL2	Sarcoidosis
HLA-DRA	
HLA-DRB9	
HLA-DRB3	AIH, PSC, Crohn's
HLA-DRB2	
HLA-DRB1	AIH, PBC, PSC, UC, Crohn's, MS, SS, T1D, SLE, ATD, Vitiligo, MG, APLS
HLA-DQA1	PBC, PSC, Celiac disease, asthma, SS, T1D, ATD, AA, APS
HLA-DQB1	AIH, PBC, PSC, UC, Celiac disease, SS, SLE, T1D, ATD, Vitiligo, AA
HLA-DQB3	
HLA-DQA2	
HLA-DQB2	
HLA-DOB	
TAP2	Psoriasis, Crohn's, Celiac disease
PSMB8	
TAP1	Psoriasis
PSMB9	
HLA-DMB	Psoriasis
HLA-DMA	Psoriasis, APLS
BRD2	
HLA-DOA	
HLA-DPA1	AA
HLA-DPB1	Vitiligo
HLA-DPA2	
HLA-DPB2	

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Crohn's disease, multiple sclerosis (MS), type 1 diabetes (T1D), Sjogren's syndrome (SS), systemic lupus erythrematosus (SLE), and autoimmune thyroid disease (ATD).

The HLA-DQA1 and HLA-DQB1 genes encode proteins that pair up with each other: i.e. they form heterodimers (meaning dimers formed from two distinct proteins). The specific variants (alleles) of these 2 genes allow gluten to become toxic because the dimers formed from these two proteins bind specifically to certain peptides formed when gluten is partially digested. These gluten peptides are rich in the amino acids glutamine and proline. Transglutaminase 2 acts on these peptides, and converts the glutamine residues to glutamates. This gives the peptides a special ability to bind to the unique HLA-DQA1/HLA-DQB1 heterodimers found in celiac disease patients. The heterodimers bound to gluten peptides are then presented to T cells, resulting in a complex inflammatory cascade and tissue damage. Not all the pieces of this puzzle are worked out yet, but it is known that the gene CTLA-4 (cytotoxic T lymphocyte associated) [located on chromosome 2q33] may contribute to celiac disease susceptibility. The CTLA-4 gene produces a protein that normally acts as a negative regulator of T cell activation. Mutations in the CTLA-4 gene can result in uncontrolled T cell activation, and therefore increased susceptibility to a number of autoimmune diseases. Very recently, a genetic variant in the myosin IXB (MYO9B) gene [chromosome 19p13.11] has been associated with celiac disease. This gene may cause an impairment of the intestinal barrier, which may explain why immunogenic gluten peptides are able to pass through the epithelial barrier. This gene represents an interesting candidate for the IBD6 gene, also located on chromosome 19p13, which confers susceptibility to both Crohn's disease and ulcerative colitis.

The closely linked HLA-DQA1 and HLA-DQB1 pair of genes are known as CELIAC1, the CTLA-4 gene is known as CELIAC3, and the myosin IXB (MYO9B) gene is known as CELIAC4. So far, the CELIAC2 gene (located in the chromosome region 5q31-q33) has not been identified. The latter gene does not appear to be the same as the IBD5 gene mapping to this same region (IBD5 is discussed in the opposite column). Other genes in this 5q region that have also been eliminated as possible candidate celiac susceptibility genes include: IL4, IL5, IL9, IL13, IL17B and NR3C1.

An additional gene determining susceptibility to celiac disease is the MBL2 (mannose binding lectin) gene located on chromosome 10q11.2-q21. This particular gene is also associated with Crohn's disease. Finally, a gene on chromosome 11q has been implicated in susceptibility to celiac disease. This gene may represent the matrix metalloproteinase 3 gene (MMP-3) (stromelysin-1) (chromosome location 11q23). Variants of this gene appear to be a risk factor for celiac disease only in men; this is different from the HLA susceptibility alleles that confer a higher risk in women. The MMP-3 gene has also been associated with PSC susceptibility and disease progression. The considerable overlap between the genes conferring susceptibility to celiac disease, and those conferring susceptibility to PSC and/or IBD, may explain why these diseases can often come together.

For additional reading on celiac disease, we recommend the following www resources:

Celiac Disease Foundation
http://www.celiac.org/

Celiac Sprue Association
http://www.csaceliacs.org/

Celiac Disease
http://www.nlm.nih.gov/medlineplus/celiacdisease.html

Scientific Literature, Celiac disease
http://www.psc-literature.org/Celiac.htm

Update on Inflammatory Bowel Disease Genetics

by David Rhodes

Researchers continue to make progress in identifying genes conferring susceptibility to inflammatory bowel disease (IBD), and confirming their associations with IBD in different populations. Much of the recent research has focused on the IBD5 gene. Recent data suggests that polymorphisms in the organic cation transporter (OCTN) genes OCTN1 (SLC22A4) and OCTN2 (SLC22A5) represent disease-causing mutations within the IBD5 locus (chromosome 5q31). These transporters are thought to be involved in the transport of L-carnitine. Overall, the recent results confirm the association between this pair of genes and Crohn's disease. Interestingly one study (Waller et al, 2005) suggests that this pair of genes (or a gene tightly linked to them) may be equally important in determining susceptibility to ulcerative colitis. Lamhonwah et al (2005) have proposed that these genes may share sequences in common with pathogens (*Campylobacter jejuni* and *Mycobacterium paratuberculosis*) leading to production of antibodies against these organic cation transporters, further impairing their function.

References

Lamhonwah AM, Ackerley C, Onizuka R, Tilups A, Lamhonwah D, Chung C, Tao KS, Tellier R, Tein I 2005 Epitope shared by functional variant of organic cation/carnitine transporter, OCTN1, *Campylobacter jejuni* and *Mycobacterium paratuberculosis* may underlie susceptibility to Crohn's disease at 5q31. Biochem. Biophys. Res. Commun. 337: 1165-1175.

Martinez A, Del Carmen Martin M, Mendoza JL, Taxonera C, Diaz-Rubio M, de la Concha EG, Urcelay E 2005 Association of the organic cation transporter OCTN genes with Crohn's disease in the Spanish population. Eur. J. Hum. Genet. Dec 7 [Epub ahead of print].

Noble CL, Nimmo ER, Drummond H, Ho GT, Tenesa A, Smith L, Anderson N, Arnott ID, Satsangi J 2005 The contribution of OCTN1/2 variants within the IBD5 locus to disease susceptibility and severity in Crohn's disease. Gastroenterology 129: 1854-1864.

Vermeire S, Pierik M, Hlavaty T, Claessens G, van Schuerbeeck N, Joossens S, Ferrante M, Henckaerts L, Bueno de Mesquita M, Vlietinck R, Rutgeerts P 2005 Association of organic cation transporter risk haplotype with perianal penetrating Crohn's disease but not with susceptibility to IBD. Gastroenterology 129: 1845-1853.

Waller S, Tremelling M, Bredin F, Godfrey L, Howson J, Parkes M 2005 Evidence for association of OCTN genes and IBD5 with ulcerative colitis. Gut Dec 16 [Epub ahead of print].

UPDATE ON DONATIONS TO PSC PARTNERS SEEKING A CURE

Here is a list of our recent individual donors:

IN HONOR OF	*DONOR:*
PSC Partners	Rachel and Dave Rockafellow
Todd Clouser's 2nd anniversary of his liver transplant	Amy and Michael Shimberg
Scott Clouser for his loving gift to his brother Todd	Joanne and Stephen Grieme
Josh Miletic	Nancy Luna (10% of sales from Body Shop at Home Party at Dana Miletic's)
Mike Zaloudek	James Zaloudek
	Ronald and Elizabeth Peterson
Jeffrey Brown	Faye Brown
Vreni McMaster	Lee Bria
Ricky Safer	Nira and Alan Lipner
	Jacquie and Norm Levy
Denise Boyd	Lisa and David Jones
Anonymous	Roy Thomas Toutant
Lee Bria	Vreni McMaster
William F. Bria III	Rosemarie Bria-Levine
	Tara and Moiz Bhabhrawala
	Kimberly Crawford
	Michelle Dunn
	Kevin Flaherty
	Mary Freer
	Steven Gay
	Paramjit Gill
	Gary Huffnagle
	Robert Hyzy
	Mary Malec
	Bethany and Tom Moore
	Charlotte Pierson
	Marc Peters-Golden
	Raju Reddy
	Lisa Reed
	Robert Sitrin
	Galen Toews
	Sheila Tsai
	Cathy Walls
	Rebecca Weeks
	Eric White
	Vreni McMaster
Susan Malat	Scott Malat
Abbey Meltzer	Cassandra L. Dickson

IN MEMORY OF:	*DONOR:*
The donor who gave life to Lauren Boiteau	Ruth and Richard Boiteau
Helen Rhodes	Ricky and Don Safer
	Lee and William Bria
	Jennifer Soloway and Mark Stivers

(continued on p. 10)

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UPDATE ON DONATIONS TO PSC PARTNERS SEEKING A CURE (contd.)

IN MEMORY OF:	*DONOR:*
Thomas A. Rogers	Deborah and William Howard Susan Kaplan and Paul Colarulli Jeanne and Peter Sullivan Thomas Knowles Bonnie and David Moshier Lean and William Steinberg Barbara Lemmer Roberta Arnold Paula Weeda Susan Ascher and Paul Kalb Nancy/Donald Boselovic
Lillian Wachtel (Mother of Ricky Safer)	Lee and William Bria Marian and Dennis Haugh Caryn and David Schechtman Elaine and Len Mazin Phyllis Zisman Mimi and Bob Safer Ronni and David Hauptman Carolyn and Jo Borus Lisa and Steve Friedman Liz and Kent Kreider Debbie and John Abrams Marilyn and Buddy Hyman Patti and Mike Ross

We'd like to thank ALL our donors who have supported us during our first year of PSC Partners Seeking a Cure. In addition, here's a special thank you to these donors:

INDIVIDUAL DONORS

SILVER LEVEL SPONSORS:
- Don and Ricky Safer
- Friends and colleagues of Bill Bria at the University of Michigan Hospital
- Rosemarie Bria-Levine
- Stephen Winber
- Susan and Scott Malat

BRONZE LEVEL SPONSORS:
- Barb and T.J. Henshaw
- Mary and Tim Wholey
- Judy and Arne Myrabo
- Rilee and Dike Ajiri
- Jon Shapiro
- Meredith Harris
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COPPER LEVEL SPONSORS:
- Denise Boyd and Michael Jenkins
- Reggie and Jeff Belmont
- Jennifer and Jason Drasner
- Darrell Falk and Family
- Nira and Alan Lipner

CORPORATE SPONSORS

GOLD LEVEL SPONSORS:
- Axcan Scandipharm
- MFit at the University of Michigan

SILVER LEVEL SPONSORS:
- American Liver Foundation Western Pennsylvania Chapter

BRONZE LEVEL SPONSORS:
- Procter and Gamble Pharmaceuticals
- Citigroup

COPPER LEVEL SPONSORS:
- Salix Pharmaceuticals

The Twelve Days of Christmas and Hannukah

This song represents a celebration of the accomplishments of the PSC Partners Seeking a Cure Foundation in 2005:

On the **first** day of Christmas and Hannukah, PSC Partners gave to thee:

- A 501(c)3, and a conference on the liver and biliary tree.

On the **second** day of Christmas and Hannukah, PSC Partners gave to thee:

- Two web sites a-growing (www.pscpartners.org and www.psc-literature.org),
- A 501(c)3 and a conference on the liver and biliary tree.

On the **third** day of Christmas and Hannukah, PSC Partners gave to thee:

- Three important missions (research, education, and support),
- Two web sites a-growing (www.pscpartners.org and www.psc-literature.org),
- A 501(c)3, and a conference on the liver and biliary tree.

etc, etc, etc

On the **twelfth** day of Christmas and Hannukah, PSC Partners gave to thee:

- Twelve months of hope for you and me,
- An eleven-star brochure (Living with Primary Sclerosing Cholangitis),
- Ten newsletters (this is the tenth issue!),
- Nine ways to prevent colon cancer (see article on p. 12-14 of this issue),
- Eight board members (Dike Ajiri, Lee Bria, Elissa Deitch, Dr. Gregory Everson, Chris Klug, David Rhodes, Ricky Safer, and Deb Wente),
- Seven MD's a-speaking (Drs. Gregory Everson, James Trotter, Joel Levine, Igal Kam, Lisa Forman, Lisa Corbin, and Aubrey Goldstein),
- Six corporate partners (Axcan Scandipharm, MFit at the University of Michigan, American Liver Foundation Western Pennsylvania Chapter, Procter and Gamble, Citigroup, and Salix Pharmaceuticals),
- Five levels of sponsorship (Platinum, Gold, Silver, Bronze, and Copper),
- Four successful fund-raising projects (Kroger gift cards, wristbands, notecards, and recycling program),
- Three important missions (research, education, and support),
- Two web sites a-growing (www.pscpartners.org and www.psc-literature.org),
- A 501(c)3, and a conference on the liver and biliary tree.

David Rhodes

Laughter is the Best Medicine

I wouldn't wish PSC and IBD on anyone. Nevertheless, I thought it would be interesting to speculate how things might be different if Santa Claus had PSC/IBD:

- He would likely not be as plump
- He would likely make more frequent stops
- His LFTs would be "elve"-ated
- He would have to cut back on the cookies and milk
- He might have extraintesinal manifestations, such as sacroiliitis (from carrying such a large "sack"?)
- He might be known as "Chris Crohngle" instead of "Kris Kringle"
- Mrs. Claus might be a member of the PSC support group

David Rhodes

Chris Klug Foundation

One of our board members, Chris Klug, has recently established his own foundation, the Chris Klug Foundation:

http://chrisklugfoundation.org/

whose mission is to "promote life saving donation and improve the quality of life for donors, donor families, organ transplant candidates and recipients." One goal of his foundation is to share the donation message to the world's youth through action sports and a grassroots program titled "Donor Dudes." With the help of college and high school students and campus outreach clubs the foundation will work towards establishing "Donor Dudes" chapters on every high school and college campus in the world.

Chris Klug is himself a liver transplant recipient (July, 2000) and the first ever transplant recipient Olympic Medalist (Salt Lake City, Utah 2002 Snowboarding). He continues to race on the FIS International World Cup Tour, and he is currently preparing for the Winter Olympics in Torino, Italy in 2006. We wish him every success as he strives for Gold in Torino!

Chris is active in the donor awareness effort, speaking all over the country.

Nine Ways to Reduce the Risk of Colon Cancer

by David Rhodes

It is well established that primary sclerosing cholangitis (PSC) is often associated with inflammatory bowel disease (IBD), particularly ulcerative colitis (UC). Those patients with both PSC and UC (approximately 70% of PSC patients) are at increased risk of developing colorectal cancer (Bansal and Sonnenberg, 1996; Kornfeld et al, 1997). Long-term follow-up of patients with PSC has revealed a high incidence of colon cancer and bile duct cancer, both of which are most likely related to the chronic inflammation involving these two organs (Wiesner, 1994). Many common cancers develop as a consequence of years of chronic inflammation (Moss and Blaser, 2005). Patients with PSC and UC are five times more likely to develop colonic dysplasia than patients with UC alone (Brentnall et al, 1996). One explanation for this increased risk of colon cancer in the setting of PSC is that these patients may have higher levels of carcinogenic (cancer promoting) secondary bile acids (Marchesa et al, 1997). PSC/UC patients seem to be more likely to develop cancer in the right side of the colon, where secondary bile acid concentrations are highest (Marchesa et al, 1997). Given this higher risk of colon cancer in PSC with UC it is useful to consider some ways of reducing this risk.

1. Ursodeoxycholic acid therapy. Ursodeoxycholic acid (UDCA) significantly decreases the risk for developing colorectal dysplasia or cancer in patients with UC and PSC (Tung et al, 2001; Pardi et al, 2003). When ursodeoxycholic acid is incorporated into bile, it competes with the tumor/cancer promoting deoxycholic acid to protect against the development of colon cancer (Martinez et al, 1998). UDCA is said to be "chemopreventative". UDCA may also prevent further progression of low-grade dysplasia in colorectal IBD in the absence of PSC (Sjoqvist, 2004).

2. 5-Aminosalicylic acid therapy. 5-Aminosalicylates such as sulfasalazine and mezalazine (Asacol) are frequently prescribed to control inflammation in UC. While there is still some controversy concerning the question of whether 5-aminosalicylate therapy has a protective effect against the development of colon cancer, the emerging consensus is that regular 5-ASA use is associated with some reduction in the risk of colorectal cancer developing in ulcerative colitis (Eaden et al, 2000; Eaden, 2003; van Staa et al, 2005; Velayos et al, 2005; Giannini et al, 2005). This effect of 5-ASA may be in part related to its ability to act as a free-radical scavenger, arresting cell, tissue and DNA damage (Allgayer, 1991).

3. Folic acid supplements. In addition to anti-inflammatory medications (such as 5-ASA compounds), and ursodeoxycholic acid, folic acid supplements show promise for chemoprevention in colorectal cancer (Itzkowitz, 2002; Croog et al, 2003; Diculescu et al, 2003). Folate maintains the normal DNA methylation process and levels of DNA precursors (Biasco and Marco, 2005). Altered gene expression and DNA methylation resulting from folate deficiencies may contribute to colorectal cancer development (Bott et al, 2003; Kim, 2004). Both retrospective and prospective epidemiologic studies confirm the observation that a high intake of folate correlates with a lower risk of colorectal cancer (Bott et al, 2003; Giovannucci, 2002). Folate deficiency enhances intestinal carcinogenesis in several animal models (Giovannucci, 2002). IBD is often associated with low folate status, and is correlated with increased homocysteine levels (Chowers et al, 2000; Zezos et al, 2005), which may also result in increased risk of arterial and venous thrombosis (Zezos et al, 2005). Because sulfasalazine can cause folate deficiencies (Longstreth and Green, 1983), folate supplementation would appear to be particularly important in patients on long-term sulfasalazine therapy.

4. Increase consumption of methionine or other methyl donors (such as glycine betaine), and reduce intake of alcohol. There is also evidence from epidemiological studies that diets which are low in methyl donors, such as low contents of folate and/or methionine, combined with relatively high alcohol consumption, can enhance the risk of colorectal cancer (Bott et al, 2003). High alcohol consumption, which has a strong anti-folate effect, has been related to higher risk of colorectal cancer. The deleterious effects of alcohol are accentuated when folate or methionine/glycine betaine intake is low (Giovannucci, 2002).

5. Vitamin D and calcium supplements. Recent findings from a wide variety of preclinical experimental studies, epidemiological studies, and a few human clinical trials have indicated that in addition to folate, dietary calcium and vitamin D can inhibit colon carcinogenesis (Lamprecht and Lipkin, 2003; Slattery et al, 2004). Vitamin D plays a key role in regulating calcium levels and bone metabolism. Deficiencies of vitamin D and calcium are common in IBD and cholesatic liver disease, and can therefore also contribute to metabolic bone disease (Bengoa et al, 1984). Low vitamin D status is implicated in the etiology of a number of different autoimmune diseases and cancers (Holick, 2005). Increased vitamin D intakes might decrease the incidence and severity of autoimmune diseases, the rate of bone fracture, and incidence of cancers (Cantorna and Mahon, 2004; Holick, 2005).

6. Fish oil supplements. In animal models, dietary fish oils rich in omega-3 fatty acids (eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA)) protect against colon cancer (Lindner, 1991). This may in part be because they protect against oxidative DNA damage in intestinal cells (Bancroft et al, 2003). They may act like 5-aminosalicylates as free-radical scavengers (Barbosa et al, 2003), and as anti-inflammatory agents protecting against colitis development (Arita et al, 2005) and carcinogenesis (Bardon et al, 2005). There is both epidemiologic and experimental evidence that the long-chain omega-3 fatty acids exert protective effects against some common cancers, including colon cancer (Rose et al, 1999; Roynette et al, 2004). Fish oils may also be important in reducing the severity of inflammatory and autoimmune disease (Simopoulos, 2002).

7. Reduce total fat intake and increase dietary fiber. Data obtained in metabolic epidemiological and laboratory animal model studies show the enhancement of colon cancer by certain types of fat, and protection against it by certain dietary fibers (Reddy, 2000). Decreasing fat intake and increasing fiber consumption, have both been linked to a lower incidence of colon cancer in multiple epidemiologic studies (Garay and Engstrom, 1999). There is substantial observational evidence that diets high in total calories and fat and or low in fruits and vegetables or total fiber, as well as low levels of physical activity, are related to the risk of colonic cancer (Gatof and Ahnen, 2002). Recent studies, however, have questioned whether a diet high in fiber may not reduce a person's risk of colon cancer (Park et al., 2005). Despite this lack of association, the authors note, "a diet high in dietary

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fiber from whole plant foods can be advised because this has been related to lower risks of other chronic conditions such as heart disease and diabetes" (Park et al, 2005)

8. Vitamin E and vitamin C supplements. Antioxidants, such as vitamin E or C, may counteract the activity of carcinogenic substances and offer protection against colon cancer (Garay and Engstrom, 1999).

9. Annual colonoscopies. Last, but by no means least, it is strongly recommended that PSC patients have annual colonoscopies to look for early signs of colon cancer. Surveillance colonoscopy, despite its limitations, is beneficial for detecting earlier stage cancers and, probably, mortality reduction (Itzkowitz, 2002). Colectomy is typically reserved for patients whose biopsy findings are indicative of heightened cancer risk based on interpretation by pathologists (Itzkowitz and Present, 2005).

References

Allgayer H 1991 Clinical relevance of oxygen radicals in inflammatory bowel disease--facts and fashion. Klin. Wochenschr. 69: 1001-1003.

Arita M, Yoshida M, Hong S, Tjonahen E, Glickman JN, Petasis NA, Blumberg RS, Serhan CN 2005 Resolvin E1, an endogenous lipid mediator derived from omega-3 eicosapentaenoic acid, protects against 2,4,6-trinitrobenzene sulfonic acid-induced colitis. Proc. Natl. Acad. Sci. U.S.A. 102: 7671-7676.

Bancroft LK, Lupton JR, Davidson LA, Taddeo SS, Murphy ME, Carroll RJ, Chapkin RS 2003 Dietary fish oil reduces oxidative DNA damage in rat colonocytes. Free Radic. Biol. Med. 35: 149-159.

Bansal P, Sonnenberg A 1996 Risk factors of colorectal cancer in inflammatory bowel disease. Am. J. Gastroenterol. 91: 44-48.

Barbosa DS, Cecchini R, El Kadri MZ, Rodriguez MA, Burini RC, Dichi I 2003 Decreased oxidative stress in patients with ulcerative colitis supplemented with fish oil omega-3 fatty acids. Nutrition 19: 837-842.

Bardon S, Benelli C, Bernard-Gallon D, Blottiere H, Demarquoy J, Duee PH, Forest C 2005 Dietary fatty acids and cancer: potential cellular and molecular mechanisms. Bull. Cancer 92: 697-707.

Bengoa JM, Sitrin MD, Meredith S, Kelly SE, Shah N, Baker AL, Rosenberg IH 1984 Intestinal calcium absorption and vitamin D status in chronic cholestatic liver disease. Hepatology 4: 261-265.

Biasco G, Di Marco MC 2005 Folate and prevention of colorectal cancer in ulcerative colitis. Eur. J Cancer Prev. 14: 395-398.

Bott C, Lembcke B, Stein J 2003 Colorectal cancer and folate. Z. Gastroenterol. 41: 263-270.

Brentnall TA, Haggitt RC, Rabinovitch PS, Kimmey MB, Bronner MP, Levine DS, Kowdley KV, Stevens AC, Crispin DA, Emond M, Rubin CE 1996 Risk and natural history of colonic neoplasia in patients with primary sclerosing cholangitis and ulcerative colitis. Gastroenterology 110: 331-338.

Cantorna MT, Mahon BD 2004 Mounting evidence for vitamin D as an environmental factor affecting autoimmune disease prevalence. Exp. Biol. Med. (Maywood) 229: 1136-1142.

Chowers Y, Sela BA, Holland R, Fidder H, Simoni FB, Bar-Meir S 2000 Increased levels of homocysteine in patients with Crohn's disease are related to folate levels. Am. J. Gastroenterol. 95: 3498-3502.

Croog VJ, Ullman TA, Itzkowitz SH 2003 Chemoprevention of colorectal cancer in ulcerative colitis. Int. J. Colorectal Dis. 18: 392-400.

Diculescu M, Ciocirlan M, Ciocirlan M, Pitigoi D, Becheanu G, Croitoru A, Spanache S 2003 Folic acid and sulfasalazine for colorectal carcinoma chemoprevention in patients with ulcerative colitis: the old and new evidence. Rom. J. Gastroenterol. 12: 283-286.

Eaden J 2003 Review article: the data supporting a role for aminosalicylates in the chemoprevention of colorectal cancer in patients with inflammatory bowel disease. Aliment. Pharmacol. Ther. 18: 15-21.

Eaden J, Abrams K, Ekbom A, Jackson E, Mayberry J 2000 Colorectal cancer prevention in ulcerative colitis: a case-control study. Aliment. Pharmacol. Ther. 14: 145-153.

Garay CA, Engstrom PF 1999 Chemoprevention of colorectal cancer: dietary and pharmacologic approaches. Oncology (Huntingt.) 13: 89-97.

Gatof D, Ahnen D 2002 Primary prevention of colorectal cancer: diet and drugs. Gastroenterol. Clin. North Am. 31: 587-623, xi.

Giannini EG, Kane SV, Testa R, Savarino V 2005 5-ASA and colorectal cancer chemoprevention in inflammatory bowel disease: can we afford to wait for 'best evidence'? Dig. Liver Dis. 37: 723-731.

Giovannucci E 2002 Epidemiologic studies of folate and colorectal neoplasia: a review. J. Nutr. 132: 2350S-2355S.

Holick MF 2005 Vitamin D: important for prevention of osteoporosis, cardiovascular heart disease, type 1 diabetes, autoimmune diseases, and some cancers. South. Med. J. 98: 1024-1027.

Itzkowitz SH 2002 Cancer prevention in patients with inflammatory bowel disease. Gastroenterol. Clin. North Am. 31: 1133-1144.

Itzkowitz SH, Present DH; for the Crohn's Colitis Foundation of America Colon Cancer in IBD Study Group 2005 Consensus conference: colorectal cancer screening and surveillance in inflammatory bowel disease. Inflamm. Bowel Dis. 11: 314-321.

Kim YI 2004 Folate and DNA methylation: a mechanistic link between folate deficiency and colorectal cancer? Cancer Epidemiol. Biomarkers Prev. 13: 511-519.

Kornfeld D, Ekbom A, Ihre T 1997 Is there an excess risk for colorectal cancer in patients with ulcerative colitis and concomitant primary sclerosing cholangitis? A population based study. Gut 41: 522-525.

Lamprecht SA, Lipkin M 2003 Chemoprevention of colon cancer by calcium, vitamin D and folate: molecular mechanisms. Nat. Rev. Cancer 3: 601-614.

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(continued from p. 13)

Lindner MA 1991 A fish oil diet inhibits colon cancer in mice. Nutr. Cancer 15: 1-11.

Longstreth GF, Green R 1983 Folate status in patients receiving maintenance doses of sulfasalazine. Arch. Intern. Med. 143: 902-904.

Marchesa P, Lashner BA, Lavery IC, Milsom J, Hull TL, Strong SA, Church JM, Navarro G, Fazio VW 1997 The risk of cancer and dysplasia among ulcerative colitis patients with primary sclerosing cholangitis. Am. J. Gastroenterol. 92: 1285-1288.

Martinez JD, Stratagoules ED, LaRue JM, Powell AA, Gause PR, Craven MT, Payne CM, Powell MB, Gerner EW, Earnest DL 1998 Different bile acids exhibit distinct biological effects: the tumor promoter deoxycholic acid induces apoptosis and the chemopreventive agent ursodeoxycholic acid inhibits cell proliferation. Nutr. Cancer 31: 111-118.

Moss SF, Blaser MJ 2005 Mechanisms of disease: inflammation and the origins of cancer. Nat. Clin. Pract. Oncol. 2: 90-97.

Pardi DS, Loftus EV Jr, Kremers WK, Keach J, Lindor KD 2003 Ursodeoxycholic acid as a chemopreventive agent in patients with ulcerative colitis and primary sclerosing cholangitis. Gastroenterology 124: 889-893.

Park Y, Hunter DJ, Spiegelman D, Bergkvist L, Berrino F, van den Brandt PA, Buring JE, Colditz GA, Freudenheim JL, Fuchs CS, Giovannucci E, Goldbohm RA, Graham S, Harnack L, Hartman AM, Jacobs DR Jr, Kato I, Krogh V, Leitzmann MF, et al 2005 Dietary fiber intake and risk of colorectal cancer: a pooled analysis of prospective cohort studies. JAMA 294: 2849-2857.

Reddy BS 2000 The Fourth DeWitt S. Goodman lecture. Novel approaches to the prevention of colon cancer by nutritional manipulation and chemoprevention. Cancer Epidemiol. Biomarkers Prev. 9: 239-247.

Rose DP, Connolly JM 1999 Omega-3 fatty acids as cancer chemopreventive agents. Pharmacol. Ther. 83: 217-244.

Roynette CE, Calder PC, Dupertuis YM, Pichard C 2004 n-3 polyunsaturated fatty acids and colon cancer prevention. Clin. Nutr. 23: 139-151.

Simopoulos AP 2002 Omega-3 fatty acids in inflammation and autoimmune diseases. J. Am. Coll. Nutr. 21: 495-505.

Sjoqvist U, Tribukait B, Ost A, Einarsson C, Oxelmark L, Lofberg R 2004 Ursodeoxycholic acid treatment in IBD-patients with colorectal dysplasia and/or DNA-aneuploidy: a prospective, double-blind, randomized controlled pilot study. Anticancer Res. 24: 3121-3127.

Slattery ML, Neuhausen SL, Hoffman M, Caan B, Curtin K, Ma KN, Samowitz W 2004 Dietary calcium, vitamin D, VDR genotypes and colorectal cancer. Int. J. Cancer 111: 750-756.

Tung BY, Emond MJ, Haggitt RC, Bronner MP, Kimmey MB, Kowdley KV, Brentnall TA 2001 Ursodiol use is associated with lower prevalence of colonic neoplasia in patients with ulcerative colitis and primary sclerosing cholangitis. Ann. Intern. Med. 134: 89-95.

van Staa TP, Card TR, Leufkens HG, Logan RF 2005 5-Aminosalicylate use and colorectal cancer risk in inflammatory bowel disease: a large epidemiological study. Gut 54: 1573-1578.

Velayos FS, Terdiman JP, Walsh JM 2005 Effect of 5-aminosalicylate use on colorectal cancer and dysplasia risk: a systematic review and metaanalysis of observational studies. Am. J. Gastroenterol. 100: 1345-1353.

Wiesner RH 1994 Current concepts in primary sclerosing cholangitis. Mayo Clin. Proc. 69: 969-982.

Zezos P, Papaioannou G, Nikolaidis N, Vasiliadis T, Giouleme O, Evgenidis N 2005 Hyperhomocysteinemia in ulcerative colitis is related to folate levels. World J. Gastroenterol. 11: 6038-6042.

Colon Cancer (MedicineNet)
http://www.medicinenet.com/colon_cancer/article.htm

POETRY CORNER

A physician's guide to PSC

(Poem by David Weston)

With PSC, the biliary tree
Displays Cholangeopathy
Its prognosis is fibrosis
Leading up to full cirrhosis
When this occurs one then refers
for transplant, if the team concurs
Cause unknown, the treatment shown
is UDCA on its own
Also seen: a drug regime
of daily cholestyramine
Research believes that this relieves
Pruritis that your charge perceives
Diagnose it if he shows it
with these tests that should expose it
Try CT, MRCP
to reveal his biliary tree
If this is creepy, make him sleepy
Carry out an ERCP
A stent may gain a better drain
Though some debris may still remain
In some cases patient faces
Jaundice due to cholestasis
This one sees with greatest ease
From sampling patient LFTs
A suggestion for a question
Is to check his fat digestion
An expert thinks some special drinks
Will counteract the weight-loss jinx
An odd intrigue is that fatigue
Could be both small or major league
No clear connection on inspection
with nutrition or infection
Much of concern is left to learn
As more research is done in turn
But the mission for the physician
is stop the rot and seek remission
Failing that the treatment granted
Is cure the man - get him transplanted!

Quotations

The grand essentials of happiness are: something to do, something to love, and something to hope for.

Allan K. Chalmers

If you lose hope, somehow you lose the vitality that keeps life moving, you lose that courage to be, that quality that helps you go on in spite of it all.

Martin Luther King, Jr.

Additional Contact Information

Ricky Safer is the principal contact person for our PSC Partners Seeking a Cure Foundation. She can be reached at:

pscpartners@yahoo.com

Submitting Newsletter Articles

If you would like to contribute an article to a future issue of this Newsletter, please e-mail it to David Rhodes:

rhodesdavid@insightbb.com

or use the "Submit Newsletter Article" form on the **www.pscpartners.org** web site.

Making Donations to PSC Partners Seeking a Cure

Tax-deductible donations can be sent to:

PSC Partners Seeking a Cure
5237 So. Kenton Way
Englewood, CO 80111

with a check made out to:

PSC Partners Seeking a Cure

Alternatively, donations can be made on-line via PayPal (**https://www.paypal.com**) to **pscpartners@yahoo.com**

Please include a note to indicate whom the donation is in honor and/or in memory of, and your return address.

We offer several levels of sponsorship

- Platinum level: $10,000
- Gold level: $5,000
- Silver level: $2,500
- Bronze level: $1,000
- Copper level: $500

Thank you for your generosity!

One of our foundation goals is to increase organ donor awareness. We encourage U.S.A. readers to visit **www.donatelife.net** and click on their state. This site gives a state by state guide to the organ donation process. This would be a good place for our members to start thinking about how to help locally, if they are interested…."While donated organs and tissue are shared at the national level, the laws that govern donation vary from state to state. Therefore, it is important for you to know what you can do to ensure your decision to be a donor is carried out."

GiveLife

Note to Readers

Articles in this newsletter have been written by persons without formal medical training. Therefore, the information in this newsletter is not intended nor implied to be a substitute for professional medical advice. Please consult with your doctor before using any information presented here for treatment. Nothing contained in this newsletter is intended to be for medical diagnosis or treatment. The views and opinions expressed in the newsletter are not intended to endorse any product or procedure.