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Quick View

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Message from the President

I have just returned from Congress 2002 in Calgary. The conference was very full, with many meetings, as well as interesting and informative educational sessions. There were a number of technologists from New Brunswick at Congress in Calgary. Some items, which came up as a result of meetings I attended as NBSMLT representative to the CSMLS Board of Directors are; Point of Care testing, International Student Training and Public Relations. You'll be hearing more about that in the future. Nova Scotia is hoping to have their Act passed in the spring session of the Legislature. The first ever David Ball award went to a Newfoundlander. Janet Reid and myself signed the AIT agreement on behalf of the NBSMLT. Have a great summer…

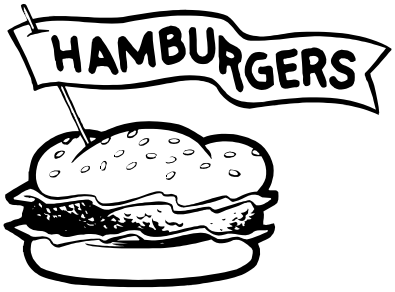
Edna Smith, MLT RT
President, NBSMLT

NBSMLT Board of Directors 2002

Standing (left to right) Marty White, Fredericton; Janelle Levesque, Edmundston; Richard Lafleur, Lay Representative; Edna Smith, President; Colleen Moran, Past President; Germaine Savoie, North Shore; Randy Thornhill, Saint John;
Seated (left to right) Bernadette Muise, Moncton; Janet Kingston, Registrar; Janet Reid, President -elect

Thought for the day:

We do not inherit the earth from our ancestors we borrow it from our children.



Escherichia coli (*E. coli*) O157:H7

Edna Smith

Escherichia coli (*E. coli*) O157:H7 is an emerging cause of foodborne illness. Most illness has been associated with eating undercooked, contaminated ground beef. Person-to-person contact in families and child care centers is also an important mode of transmission. Infection can also occur after drinking raw milk and after swimming in or drinking sewage-contaminated water.

E. coli O157:H7 is a very hardy organism and can survive refrigeration and freezer storage. If present, it can multiply slowly even at 44° F. *E.coli* O157:H7 is a pathogenic strain of *E. coli* that is isolated from the stool. It produces a shiga-like toxin that often causes bloody, watery diarrhoea. Most patients have little or no fever but experience severe abdominal pain, sometimes mistaken for appendicitis in young children. The infective dose can be as low as one organism. Incubation time is 1 to 10 days with an average of 4-5 days. Symptoms usually resolve after 1 week with approximately 6% of people developing complications. Young children are especially at risk of developing haemolytic uremic syndrome (HUS), which can cause kidney failure, brain damage, strokes and seizures. The elderly may develop thrombotic thrombocytopenic purpura (TTP), which can cause strokes or renal failure. Antibiotic treatment is contraindicated as it has been found to exacerbate the condition. Treatment is limited to symptomatic and supportive therapies only.

The shiga-like toxin that is produced by *E. coli* O157:H7 is picked up by the receptors on the lining cells in the kidney. Once these cells are attacked the toxin can enter and will damage kidney cells. This will lead to the accumulation of fibrin and platelets in the kidney, bringing to a halt normal kidney function.

E. coli O157:H7 can colonize the gut of beef and dairy cattle and is considered part of their normal flora. Problems can occur when the manure contaminates soil or drinking water (as in Walkerton) or food products such as raw milk, unpasteurized apple cider, ground beef and raw vegetables. Thorough cooking of meat to 160° F is the best safeguard against infection.

Stool samples should be collected within 6 days of the onset of symptoms.

Screening for *E.coli* O157:H7 is done using a sorbitol MacConkey plate. Identification can be made using the following tests:

1. H7 suppressed motility- stab an H7 motility tube 1 cm, incubate overnight; look for suppressed motility.
2. MacConkey purity plate: typical looking *E. coli* type colony – Lactose: positive
3. Betaglucoronidase: Negative
4. MUG: negative
5. Identification – *E. coli* - Sorbitol : Negative
6. Confirm using latex

It is important for the lab to notify both the physician and Public Health as soon as possible. An estimated 73,000 cases of infection and 61 deaths occur in the United States each year.

NBSMLT PDP RECIPIENTS !

Judith Watling
Monique Desjardins Levesque
Janet Reid
Margaret Flynn
Valerie MacDonald Duguay
Pauline Gauvin Ward
Deborah Hale
Amy Estey
James Whitman
Erin Whitman
Kathy Penney
Rachel Berube
Nancy Michaud
Jeannine Dugas
Donna LeBlanc
Renee-Claude Comeau-Ouellet
Gail Pilgrim
Janet Crawford
Yvonne Nye

NBSMLT/ATLMNB ANNUAL GENERAL MEETING SATURDAY MAY 4, 2002
HOWARD JOHNSON HOTEL, EDMUNDSTON, NB

1. Call to Order:

President Edna Smith called the meeting to order at 1315 hrs with 30 voting members and 2 guests (Jim Sloan, Abbott Sales Rep: Richard Lafleur, Lay representative of the NBSMLT Board of Directors) present. There were no objections to the presence of these guests.

Janet Reid and Bernadette Muise were appointed as scrutineers.

The President thanked the organizing committee of the APSC for their excellent work in organizing APSC 2002.

2. Approval of Agenda:

The agenda was approved as circulated. (Bernadette Muise/ Germaine Savoie)

3. President's Address: Edna Smith (published page 5)

4. Minutes of Previous AGM:

Minutes of the previous AGM May 5, 2001 received Board approval prior to publication in the April/May/June 2001 Analyzer.

5. Business Arising From the Minutes:

There was no business arising from the minutes.

6. Committee Reports:

6.1 President 2001 – Colleen Moran
6.2 Advisory Committee on Regulation and Professional Practice – Susan Atkinson
6.3 Continuing Education – Janet Reid
6.4 Public Relations - Bev Ross
6.5 Publications - Bernadette Muise

7. Treasurer's Report:

Treasurer Marty White presented the 2001 audited financial statements. The 2001 Statement of Income reported an excess of revenue over expenses of $6,959.00.

Motion:
WHEREAS the audited financial statements have been distributed to all members present and whereas adequate time has been allowed for questions, BE IT MOVED that the 2001 audited financial statements be accepted as circulated. (Germaine Savoie/ Janelle Levesque).

Carried unanimously.

8. Registrar's Report 2001: Janet Kingston

9. Academy Reports 2001:

9.1 Edmundston – Diann Roy
9.2 Fredericton – Martha White
9.3 Miramichi - Bev Ross
9.4 Moncton - Bernadette Muise
9.5 North Shore – Germaine Savoie
9.6 Saint John – Randy Thornhill

10. New Business:

MOTION:
WHEREAS it is desirable to promote two-way communication between Medical Laboratory Technology students and the NBSMLT, BE IT MOVED that the NBSMLT create a student category of membership subject to the bylaws and rules. (Janet Reid/ Anne Robinson)

Carried unanimously.

PROPOSED AMENDMENT TO BYLAW

1. Purpose
To add a student category of membership

PRESENT WORDING/ PROPOSED WORDING:

3.01 MEMBERSHIP	**3.01 MEMBERSHIP**
There shall be the following five categories of membership in the Society:	There shall be the following six categories of membership in the Society:
(a) medical laboratory technologists,	(a) medical laboratory technologists,
(b) temporary members,	(b) temporary members,
(c) specialist members,	(c) specialist members,
(d) retired members,	(d) retired members,
(e) inactive members	(e) inactive members,
	(f) **student members**

(*Continued on page 4)*

(*Continued from page 3)*

None	**3.07** **STUDENT MEMBERS** **A. A student member shall be enrolled in an accredited or approved training program leading to CSMLS certification.** **B. Student members shall be entitled to receive copies of any regular bulletins or publications issued by the Society and to receive notice of and attend meetings but shall have no voting or other rights.**

MOTION:
BE IT MOVED that the proposed Bylaw amendment for student membership be approved. (Colleen Moran/ Martha White)

Carried unanimously.

MOTION:
WHEREAS the regulatory function of the NBSMLT has become more complex, time consuming and labour intensive and the costs associated with this function will continue to rise and

WHEREAS the projected 2002 income statement shows a deficit and

WHEREAS it is prudent to provide sufficient funds for annual operating expenses for the Society BE IT MOVED that the annual licensing fees for active members of the NBSMLT be increased by $25.00 per year beginning January 2003 for the licensing year 2004. (Bernadette Muise/ Janet Reid)

Carried unanimously.

10. Appointment of Auditors:

MOTION:
WHEREAS I, the Treasurer, have recommended the reappointment of Teed Saunders Doyle and Company as auditors, BE IT MOVED that Teed Saunders Doyle and Company be re-appointed as auditors for the NBSMLT for the year 2002. (Martha White/ Randy Thornhill)

Carried unanimously.

11. Award Presentation:

President 2001 – The traditional Past President's gavel was presented to Colleen Moran by President Edna Smith. Edna thanked Colleen for her continued dedication to the Society.

RESOLUTIONS:

Be it RESOLVED that the NBSMLT extend sincere appreciation to commercial exhibitors and sponsors of APSC 2002, without whose contribution, the conference would not be possible. (Pierre Leveille)

Be it RESOLVED that sincere thanks be extended to the management and staff of the Hotel Howard Johnson, Edmundston. (Daniel Arseneau)

Be it RESOLVED that the NBSMLT formally thank the APSC 2002 organizing committee for their hard work, dedication, exceptional scientific program and well organized social events. (Colleen Moran)

MOTION:
BE IT MOVED that the voting cards dated May 4, 2002 be destroyed at the end of this Annual General Meeting. (Bernadette Muise/ Janet Reid)

Carried unanimously.

12. Adjournment:

Motion to adjourn at 1410 hr. (Janelle Levesque/ Linda Toner).

APSC and AGM 2003 will be hosted by Fredericton Academy.

President's Address AGM 2002

Edna Smith

Welcome to our AGM. ***Bienvenue a notre Réunion Générale Annuelle 2002. Cela a été un honneur et un privilège de servir comme votre présidente cette année***. It has been an honor and a privilege to serve as your president this year.

Since AGM last year your executive and Board has been very busy. Colleen and I attended Congress in St. John's NFLD. It was a great learning experience as well as a fun time. While there, Colleen and Susan signed the first AIT (Agreement on Internal Trade) agreement for Medical Laboratory Technologists. Four provinces signed this agreement. It was with sadness, a few short days later that we learned of the death of Dave Ball our CSMLS president. Both of us had chatted with him several times.

The Professional Development Program (PDP) has gone out as a voluntary program and I believe we have seen great results. Congratulations to all of you who have completed it and received your certificate. The Academies have been busy and are working hard at promoting this.

Presently we are working on a number of things – one being the role of the NBSMLT with the schools of Medical Laboratory Technology in the province and also getting a better knowledge and understanding of their curriculum and student processing. Colleen and I attended the Provincial Advisory Committee (PAC) meeting at New Brunswick Community College (NBCC) in Saint John and are presently waiting for a date for the PAC in Moncton. The Public Relations (PR) Committee is updating a video to be used in the schools for career days.
This fall we hope to use a shared student grant from the CSMLS to introduce our NBSMLT to the students in our programs.

I would like to commend Janet Kingston on the great job she does as our Registrar and Executive Director. She has been my mentor and without her help we couldn't survive.

I hope you all have enjoyed your weekend as much as I've enjoyed meeting new members of our profession***. J'espère que vous avez passer une belle fin de la semaine. J'ai beaucoup aimer rencontrer les nouveaux membres de notre profession***.

Please continue to participate in our Society. The Society is you. ***S'il vous plait continuer de participer dans notre société; car notre société c'est vous.***
Don't hesitate to contact me if you have any concerns. ***Si vous avez aucun concerne n'hésiter pas de me contacter.***

Lay Representative to The NBSMLT Board Appointed

The New Brunswick government, from names submitted by the NBSMLT Board of Directors, appointed our newest Board member, Richard Lafleur.

Richard currently operates a consulting and training business. He is very active in the community and is fluent in both French and English. Richard comes to us with a diverse background in management and training, labour relations, as well as marketing and communications. He welcomes new challenges, and demonstrates strong computer skills. His other activities include photography, Chamber of Commerce, flying (he has a pilot's licence) and Vice-President Richelieu Club, Moncton.

We met with Richard in Edmundston at the Board of Directors meeting in May and after only one meeting, he is already totally involved and promises to be a big asset to the NBSMLT Board. He brings a wealth of knowledge and experience and we welcome him to the Board.

Editor's Note:

A copy of the audited financial report for 2001 which was presented at the AGM May 4 is available upon request from Janet Kingston at the NBSMLT Office.

Janet Kingston; Executive Director
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Academy Reports

Edmundston

A meeting was held on March 27, 2002. 16 members were present, 6 via teleconference from Grand Falls. Activities for Med Lab Week were planned. Coffee and crudities with dip would be offered to the members by the Academy on Wednesday. A punch would also be served to the hospital staff for the afternoon break on that same day.

An article was sent to the local journal by one of our retired members. It was very interesting. A copy will be sent for publication in the Analyzer.

A supper was planned at a local restaurant in honor of Med Lab Week. 2 members of the Academy were honored for 20 years of service to the Edmundston Hospital. Another point of discussion at this meeting was the provincial congress.

A few other smaller meetings have been held since, but mostly by sub committees in preparation of the congress. The Academy is very active.

President : Lise Ruest Clavette
Vice President : Sylvie Deschamps
Secretary : Claire Turcotte
Treasurer : Barbara Leclerc
CE Representative :Charlene Laforge
PR Representative : Linda Toner
Area Director : Janelle Levesque

Fredericton

The Fredericton Academy had several activities during Med Lab Week. Kurt Davis and Margie Flynn made a presentation to the lab staff on Tuesday, April 16 on "CSMLS Update". It was well attended and a light lunch was provided afterward. On Wednesday, April 17 Janet Mullin gave a presentation on "Probiotics" and on Thursday, April 18 we viewed the CBC Disclosure report "Just a Small Cut". Ralph Searle organized a display outside the cafeteria. The first part of an article on the Lab, written by Ralph, was published in the River Valley Health News in March to be followed by part two in the next edition. A $500 congress grant was given to Martha White. Janet Mullin, Coral Curtis, and Jeff Justason attended a Career Fair at FHS on May 2.

Respectfully submitted,
Martha White, Area Director

North Shore

Our last academy meeting was held in Bathurst on Saturday April 20 2002, there were 29 technologists present.

4 technologists of our Academy were nominated for the David Ball award on a total of 11 nominations on the national level.

24% of the technologists in our Academy received their PDP certificate.

Campbellton's laboratory is volunteering to organise the next APSC held in the North.
Marielle Lagacé talked about the new committee ACDE MLT (Advisory Committee on the Education of MLT.) It's mandate is to contact Maritime universities to see if they are willing to give correspondence courses for technologists who want to do their baccalaureate. These are the technologists on this committee: Janet Reid, Edna Smith, Germaine Savoie, Marielle Lagacé, Janet Kingston.

Different activities were held in different hospitals during our national week to promote our profession such as : publicity on the radio, posters in the hospital, spaghetti supper, questionnaire & games in the lab, bake sale, technologist night out ,etc...The laboratory in Bathurst challenged all labs in the Academy to build something from recycled material from the laboratory. From a total of 6 laboratories, 5 participated. Tracadie won first place followed by Bathurst and Campbellton. If you want to see our masterpieces you can go on the internet:
www.geocities.com/academiene
www.hotmail.com
academiene@hotmail.com
password : nordest

Respectfully submitted,
Germaine Savoie, Area Director

Academy Reports

Moncton

The new MEDLAB Week committee at the Georges L. Dumont Hôpital arranged a breakfast presentation. The "Déjeuner Causerie" was "Comment ne pas se prendre trop sérieux tout en demeurant efficace a son travail", presented by Roland Leblanc.
They had a great start and the activities were well received by both the public and the technologists. For Med Lab week, cake was served to the technologists. A display was set up at the Moncton Hospital as well.

Moncton Academy of the NBSMLT held an Education Day April 27 at the Georges L. Dumont Hôpital. It was held in conjunction with a business meeting. There were four education sessions, presented by three speakers. Gilberte Caissie presented an introduction to Molecular Biology in both French and English. Constable Bob Devereux spoke in English about the Street Drugs available in the Moncton area. He gave us some tips on what suspicious behaviour to watch for. Dr Garceau spoke, in French, about needle stick injuries and their consequences, especially HIV and Hepatitis C infections.

Between the education sessions a short business meeting was held. There were sixteen technologists present. The Academy Terms of Reference document was circulated for review. It was noted that copies had been posted and circulated prior to the meeting. Feedback was encouraged and then a vote was called for. The Academy has a new website, still in development, which can be reached at
monctonacademynbsmlt.webhop.org

The door prize, a gift certificate to St. James Gate, a popular Moncton restaurant, was drawn for and Christiane Laforge, from the Georges L Dumont Hôpital, won. There were 2 APSC grants for Edmundston, of $45.00 each, awarded to Linda Cormier and Linda Beaulieu-Mazerolle from the Georges L. Dumont Hôpital.

Certificates and a token of Appreciation were given to the presenters at the Education Day. Next meeting is to be scheduled sometime in June.

Respectfully submitted by
Bernadette Muise, Area Director

Congress 2005

As everyone is probably aware, NB is hosting the National congress in Moncton in 2005. This will be an enormous amount of work but the rewards will be worth it. We are presently looking for people to work on the Scientific Committee. We need to get a preliminary program prepared for Congress 2003 in Quebec City. If you are willing to volunteer some of your time in the next few months, I would be delighted to hear from you.

You may contact me:
by e-mail at
anrobins@sehcc.health.nb.ca,
by telephone at 506-857-5304
or by mail at
Department of Laboratories,
The Moncton Hospital,
135 Macbeath Ave.,
Moncton, NB E1C 6Z8.

Anne Robinson,
Scientific Chair, Congress 2005

Things to Remember:

Nominations for NBSMLT President Elect 2003, who advances to President in 2004, are still open. See your area director for nomination forms.

CSMLS MODE courses are a manageable way to earn PDP credits at a reasonable cost.

Summer is a time to rest and reflect so we can be fresh for the fall challenges which will most assuredly face us. Have a great one !!

Submissions for the NBSMLT Book project have been extended until August 1, 2002. Send them along to
Sharon Nason
76 Varsity St
Saint John NB
E2K 4K7
648-9063 (h)
648-7183 (w)
email nasonc@nbnet.nb.ca

Advisory Committee on Regulation & Professional Practice (ACR&PP)

The Advisory Committee on Regulation & Professional Practice (ACR&PP) has completed a draft of the Refresher/Retraining guidelines and will be presenting them to the BOD in June, 2002.

We have been busy reviewing PDP applications and are pleased with the number of technologists that have shown an interest in the program. I would like to remind everyone to **PLEASE** include the required documentation to support your application. Receipts for attendance at conferences (or certificate) are required. Transcripts from formal courses may be submitted as photocopies, but are necessary. This will prevent any delay in the receipt of your PDP certificate.

The committee is looking for members interested in serving on the ACR&PP, as several positions will become available for the term 2003-2004. I am including an excerpt from the terms of reference for this committee. If you think you may consider a position on this committee please contact me or inform your Area Director.

Submitted by
Colleen Moran, Chair

ADVISORY COMMITTEE on REGULATION & PROFESSIONAL PRACTICE
Terms of Reference (Ref. Bylaw 11.03 B)

PURPOSE:

The Advisory Committee is responsible for:

- The development, the maintenance and the verification of compliance of the professional development programs and guidelines for practicing & non-practicing technologists.
- Providing support for the Point of Care Tests (POCT) Coordinator who shall also be a member of this committee.

ORGANIZATION:

- The Committee shall consist of a minimum of 5 members including the Chairperson and the POCT Coordinator. Members shall serve for a two-year term. (maximum 2 terms)
- The members shall be appointed by the Board of Directors (BOD).
- The Chairperson shall be elected by members of the committee.
- At least two members must be bilingual.
- In addition, members of other associations and the public may be appointed.

Medical Laboratory Technologist Week

April 15-19 is designated as (National Medical) Laboratory Week. This same group of dedicated people have also been organizing a Provincial Scientific Convention to be held May 3 and 4. Some of the public are not aware of how crucial this health care service is the well-being of the community.

Have you ever wondered what happens to your specimen after it is collected? It's quite an interesting journey. It will arrive at a reception area in the laboratory; be received into the system; delivered to the appropriate department; analyzed and reported on. Sophisticated equipment has improved the quantity and quality of testing but the human factor is absolutely necessary.

The technologist is continually observing, analyzing and interpreting. They must be alert and aware: Is the machine functioning properly? Are the abnormal results due to poor specimen collection, handling or time factors? Should the physician be notified? Should the pathologist be involved? There are checks and balances but the technologist must make decisions, which require intelligence and knowledge. Most test results are normal and require no intervention. Some require further more intense studies. A good job, well done is to produce accurate results in an appropriate time frame, being ever conscious of the fact that human lives will be influenced or affected.

The profession is often extremely stressful, always challenging, but immensely rewarding.

Barbara Baird, MLT Retired

Barbara Baird retired Medical Laboratory Technologist submitted this article for print in "Le Madawaska" April 17, 2002 (reprinted with the author's permission).

What the heck is PCR? Part 2

Gilberte Caissie

At the end of the first column I indicated that in the second column I would cover the principal and components of the PCR reaction and the Laboratory set up. Let's start with the laboratory set up. But first here is a list of molecular biology terminology that will be useful to you in helping you understand when we get into the technical aspects of molecular biology technology.

Amplification:	The production of many DNA copies from one master region of DNA
Annealing:	Spontaneous alignment of two single DNA strands to form a double helix.
cDNA (complementary DNA):	Synthetic DNA transcribed from a specific RNA through action of the enzyme reverse transcriptase.
Denaturation:	The separation of the two strands of a DNA double helix.
Dnase (Deoxyribonuclease):	An enzyme that degrades DNA to nucleotides.
DNA Polymerase:	An enzyme that can synthesize new DNA strands using a DNA template.
Restriction enzyme:	An endonuclease that will recognise specific target nucleotide sequences in DNA and break the DNA chain at those points.
Reverse transcriptase:	An enzyme that catalyses the synthesis of a DNA strand from an RNA template.
d'NTP:	Deoxynucleotide triphosphates.
Probe:	Segments of DNA/RNA that have been labelled with enzymes, antigenic substrate, chemiluminescent or radioisotopes and can bind with high specificity to complementary sequences of nucleic acids.
Oligonucleotide:	Shorts segments of DNA
Primers:	Short segments of DNA that serve as initiation points of DNA amplifications in PCR.
Amplicon:	PCR products.
Genomic DNA:	The chromosomal DNA sequence of a gene of segment of gene, including the DNA sequence non-coding as well as coding region.Also DNA that has been isolated directly from cells of chromosomes as the cloned copies or all part of such DNA.

Upcoming events:

25th World Congress of the IAMLT
International Association Medical Laboratory Technologists
Orlando, Florida, July 30 - Aug 3, 2002

27th Annual Congress of the International Society of Blood Transfusion
Vancouver, BC, Aug. 24-28, 2002

Maritech 2002 Charlottetown, PEI, Nov. 22-24, 2002

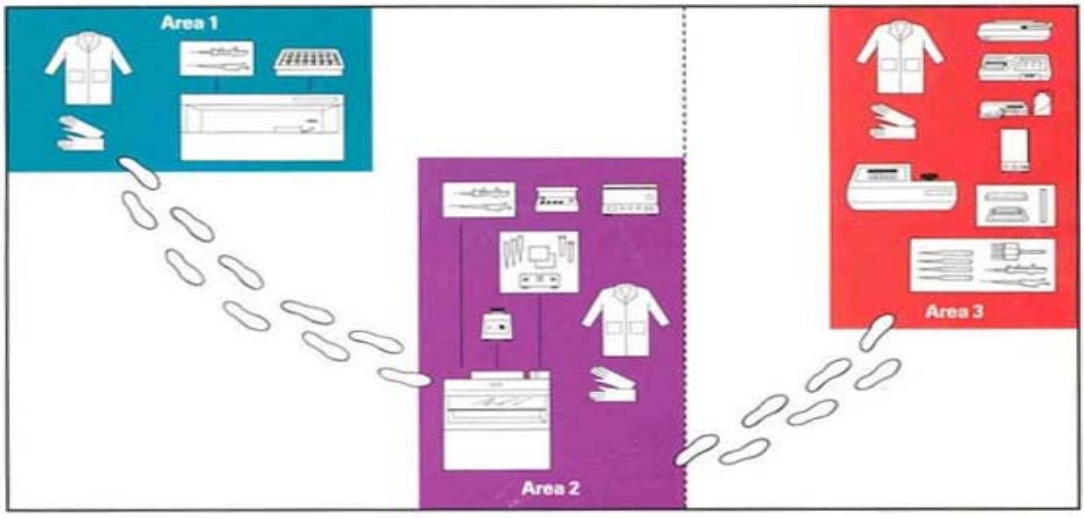
What the heck is PCR?

Gilberte Caissie

The very first thing that people have a difficult time understanding is the reason for having lots of space. Usually other laboratories hate the molecular biology laboratory because they usually have more space than they do. There is a scientific reason for this.

PCR is a very specific and sensitive technology. This technology takes minute's amount of DNA/RNA and amplifies billion and billion of copies the targeted area desired. Therefore it is very susceptible to contamination. The last thing you want is to have false positive results. There is several ways to decrease the contamination risk.

The first reason is to have 3 to 4 separate rooms. This to prevent contamination from either sample to reagents and amplified product to new sample or reagents. The designated areas are:



Area 1: Reagent preparation Room

In this room or area only PCR reagents are stored. This is what is referred to as your cleanest room i.e. free of amplified products and DNA. All your PCR reagents including enzyme and primers are stored in separate fridge and freezer. Also in this room all the consumable ex: PCR tubes, tips, etc. are all sterile. The reason for sterility is due to the presence of Rnases and Dnases present on our hands, hair and in everything that is not sterile. These Dnases and Rnases degrade and contaminate our reagents, which could cause false negative or even false positive results. We want to make certain that our reagent preparation room is as "clean" as possible. This is probably the main reason that we wear gloves all the time to prevent contamination. Dedicated equipment, meaning this equipment remains in this room at all times and is not shared or taken out of the room. The equipment found in this room are positive displacement pipettors, vortex, small microcentrifuge, fridge and freezer. No DNA or amplified products enter this room, because there is a chance of contamination of your PCR reagents and enzymes and once this happens all the reagents have to discarded and new primers sequences have to be fund; which is sometime difficult and not to say expensive. Some of the reagents and enzymes are very expensive. Even a separate lab coat for each section is mandatory.

Area 2:
Specimen Preparation and Amplification set up

In this room all the samples are received and processed. The processing includes extracting DNA/RNA from samples. Again in this room dedicated equipment is found which includes pipettors, contained microcentrifuge, vortex and biohazard hood to perform the extractions. We are dealing with many different samples which some could be infectious; therefore you must protect yourself. Also in this room is the addition of your DNA into your reaction tubes before proceeding to cycling. Again a separate lab coat for this section and gloves. This room is considered "dirtier" than the reagent prep room.

Area 3: Amplification Room

In this room you would find your thermocyclers which are used to amplify your reactions in order to obtain products for your testing. These instruments produce billions and billions of copies of your target and sometime tubes pop open because of the heat and therefore amplified product could be floating around. This room is considered "dirtier" that the specimen prep room.

Area 4: Detection Room

In this room is where all the detection of your hard labour happens. This is considered the "dirtiest" room of all because tubes containing amplified products are opened and closed constantly allowing lots of amplified products in the surroundings. Again in this room you have dedicated equipment needed to perform the detections. Again a designated lab coat for this area is necessary. You would not want to take a pipettor from the detection room into the reagent prep room; this would greatly increase your chances of contamination. If space is a real

(Continued on page 11)

What the heck is PCR?

Gilberte Caissie

(Continued from page 10)

issue, area 3 and 4 can be combined.

The goal is to follow unidirectional workflow from pre-PCR to post-PCR in order to prevent contamination. Another way to decrease the chance of contamination is to use plugged pipette tips, this helps ensure that no material or aerosol contaminates the pipette and then contaminates the next sample or reagent. Also reagents are aliquoted into smaller volumes in order if there is a problem with one aliquot it can be discarded without compromising the vial of the reagent.

OK now that we know and understand why we need so much space. Let's move on to the PCR principles of nucleic acid reactions. As technology has evolved over the years there are multiple types of amplification methods available. There are basically 4 different categories.

1. Target Amplification
Polymerase Chain Reaction (PCR)
RNA PCR
In Situ PCR
Quantitative PCR
Nested PCR
Transcription-based Amplification Methods

2. Probe Amplification
Ligase Chain Reaction (LCR)
Strand Displacement Amplification (SDA)

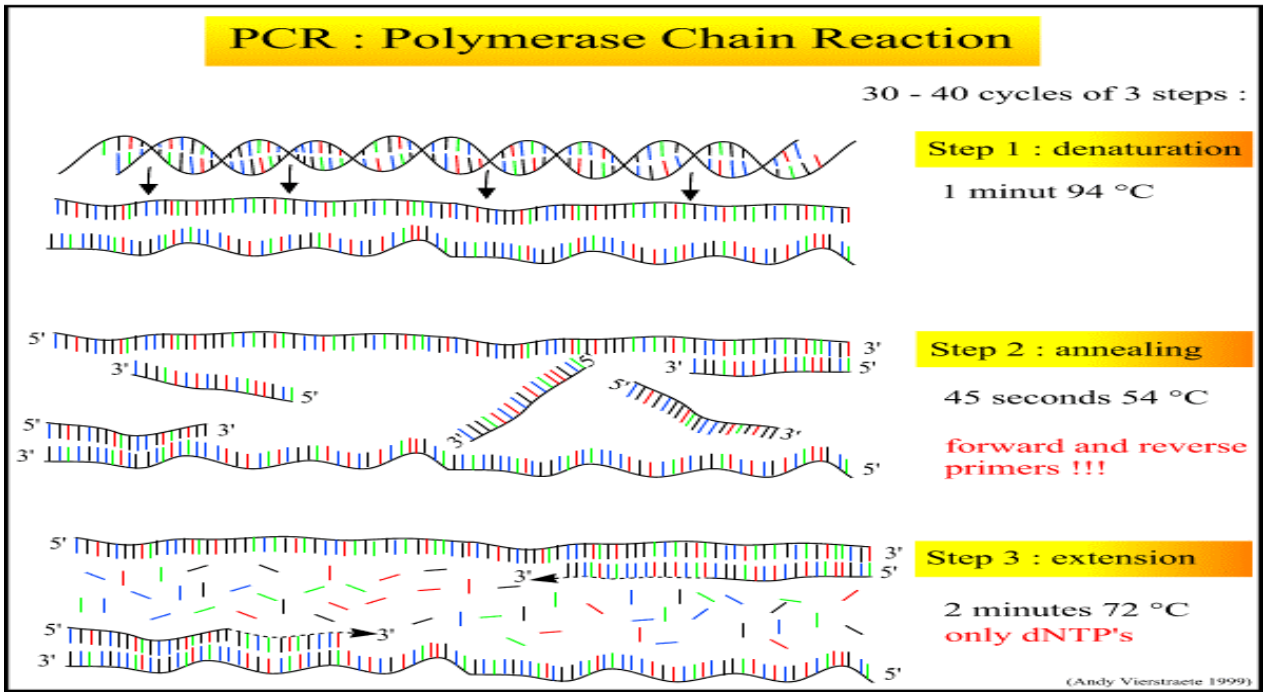
3. Signal Amplification
Q-Beta Replicase
Branched DNA Amplification

4. Hybridization Amplifications
Hybrid Capture Test

I will discuss the principal of the most common technologies. Lets first start with the most popular PCR reaction.

PCR (Polymerase Chain Reaction)
PCR is based upon the extension of short DNA primers annealed to single stranded templates by a DNA polymerase (Taq). The reaction takes place during repetitive temperature cycling at 94°C for denaturation of the strands of DNA, 55-70°C for annealing of the primers to their specific targets, and 72°C for primer extension by Taq enzyme. After the first cycle extension, the newly synthesized copy is denatured from its template and new primers anneal not only to the original DNA strands but also to the new amplicons. Extension occurs again. Thus, a doubling of the number of copies of the region defined by the primers (Amplicon) occurs during each cycle, leading to an exponential increase in amplicons; after 30 cycles, million to billion-fold amplifications can be achieved under ideal circumstances.

Enough for Part 2, the next installment will cover the rest of the principles of the different technologies and looking at the make up of a PCR reaction.



Africa, A Purging Experience

Verna Poirier

In January 2002, I had the good fortune to travel to Tanzania, East Africa's largest country. Approximately the size of Ontario, it's a country of incredible diversity. It's home to over 30 million people from approximately 120 different tribal groups, more than 4 million wild animals from 430 species, over 1000 species of birds, 60,000 insect species, 100 snake species and 25 types of reptiles. From hiking in the highlands, to animal viewing in 12 National Parks and 14 game reserves and conservation areas, to long white sandy beaches, Tanzania offers enough variety to satisfy the more than 400,000 tourists who visit every year.

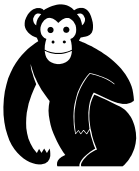
My holiday included a mix of hiking and wild life viewing. There were only four in our group. Three of us began our adventure with a 4-day, 33 km; hike up Mt. Meru, Tanzania's second highest mountain at just under 15,000 ft. The fourth person was grounded due to an ear infection. The last 24 km from Aretha to the Maumelle Gate, where our hike would begin, took over an hour...a good preview of the rough safari drives to come. Along the way, in an area called 'Little Serengeti" we saw our first giraffes, buffalo, zebra and warthogs.

It was raining as we began our hike, but cleared before arriving at the first hut. By early evening we were able to see Mt. Kilimanjaro, 44 km to the northeast. We reached the summit of Little Meru (12,500 ft) our second afternoon, hiking back to the huts in a hailstorm. About two hours into our attempt at the summit of Meru, we were forced to turn back.... a driving rain made conditions too dangerous to proceed.

Our next adventure, the 100 km hike up Mt. Kilimanjaro, along the Machame Route, took us through four different ecosystems, from tropical forests to ice fields. Our fourth night, at 13,500 ft one of our group succumbed to altitude sickness, forcing her to descend. In the wee hours of our 6th day, the two of us remaining, breathlessly inched our way to the summit by the light of the moon two days past full. We arrived at 5 am, much earlier than expected. It was ~-17*C and very windy, too cold to await the dawn views or sunrise at 6:45. We returned to camp rested 2 hours then continued down to our next campsite about 12 km away. We completed the hike the next morning.

Next we visited Lake Manyara, the Serengeti Plains, and the Ngorongoro Crater. During our 6 day safari, we saw most of the animals one would expect to see...elephants, lions, giraffes, leopard, gazelles, impalas, zebras, and hyenas to name a few. Our guide was excellent. Not only did he tell us interesting tidbits about the different animals, he helped us identify over 70 species of birds. Along the way we toured a Masai village giving us a bit of insight into the lifestyle of this nomadic tribe, and stopped at Olduvai Gorge where man is thought to originate.

Our next stop was Gombe Stream National Park on Lake Tanganyika. It was here that Jane Goodall began her study of chimpanzees in 1960, research that is continuing to this day. Our time in the park was spent tracking and observing the chimps, watching baboons, hiking and swimming. Before leaving the area, we toured Kigoma and Ujiji. Highlights included a museum built at the spot where Henry Stanley found Dr. Livingstone, the ruins of the compound where slaves were kept, the road on which these same slaves began their cross-country walk to the slave auction at Bagamoyo just north of Dar es Salaam, a local market and a boat building yard where boats are still built without power tools.



Our last stop was the Selous Game Reserve, Africa's largest game reserve. Our tour included two boat trips on the Rufigi River, one of the largest water catchments in East Africa. Besides several bird species...kingfishers, herons, eagles, spoonbills to name a few, there were crocodiles, hippos and lizards. We had two driving safaris on which we expected to see lot's more than we'd seen in the north. However, the short rains had just begun. This meant the animals, which would congregate at the larger watering holes in the dry season, were scattered throughout the reserve making them difficult to locate. We did see a fair number though, including a pack of African Wild Dogs. We had a walking safari scheduled for our last morning. Much to our disappointment we were rained out after only about 90 minutes.

Before flying home, we did a short self-guided walking tour of Dar es Salaam.

The "Purging Experience" mentioned in the title?? Much to my co-workers disappointment, all I brought back was a Campylobacter coli...not one exotic parasite. Despite the purge, the trip was wonderful. We did all we set out to do.... boost our egos by reaching the summit, saw more birds, animals & insects than we'd hoped, learned a bit about life in Tanzania, and returned home safely with a new appreciation for all we have here in Atlantic Canada.

A Bird's Eye View on Technology

A Wise Move

On behalf of the Maritech 2002 committee and the PEISMT, I wish to extend an invitation to all members of the New Brunswick Medical Laboratory Technologists to attend your **Maritech** Convention in Charlottetown, PEI this November 21st and 22nd.

Our hope is that you will ***Cross the Bridge to your Island Adventure*** to participate for two days in quality scientific presentations, exhibitors show demonstrating the latest technical advances, and enjoyable social functions.

The Conference will be held at the Delta Prince Edward Convention center located on Charlottetown's beautiful waterfront. Delegates will be able to stay at the convention site for $89.00 per night single/ double occupancy! Rooms have also been blocked for Maritech 2002 at the Inns on Great George Street, The Rodd Charlottetown Hotel, and at the Best Western Hotel for the same rate or a little better.

The Price for the two day conference for a CSMLS members is $175.00 ($ 200.00 if after Oct. 1st) or $100.00 per day (125.00 after Oct. 1st) Our Convention will end Friday late afternoon.

It wouldn't be a Maritech without a couple of social evenings to renew old friendships and make new ones too! For the convenience of delegates, both social evenings are at the Delta, Wednesday and Thursday at 2030h. Wednesday evening will provide delegates an opportunity to "meet and greet" with live musical entertainment. (Price approx.$ 10.00) Thursday will include the Exhibitors Reception from 1800-2000h (No Charge) and will be followed by an "Island Kitchen Party" (Price approx. $15.00)

If anyone has any questions or comments for the Maritech 2002 committee contact the co-chairs:
Annette Hollis RT 902-894-2335
email ***alhollis@ihis.org***
Dawna Donaldson RT 902-894-2332
email ***dldonaldson@ihis.org***

The Pre-registration form will be available and distributed very soon.

The Scientific committee has prepared a series of concurrent presentations that will provide delegates with an opportunity to learn from experts in our chosen disciplines. To provide an opportunity for professional development amongst colleagues and peers is the goal of Maritech 2002.

Here is a look at some of the scientific topics that will be presented at the convention:
All presentations will be in English only.

Chemistry
- Drugs of Abuse; Technical Related Issues
- Understanding Celiac Disease
- The BNP test- Cardiac
- The ATP III test
- Male Andropause
- Infertility: the need for 'stat' Estrogen testing

Histopathology
- TRUS Biopsies of the Prostate
- Endoscopy
- Forensic Anthropology

Transfusion Service
- Surveillance Systems for Transfusions
- Cardiac risk in Non- Cardiac Surgery
- Intravenous Immunoglobulin in Neurological Disease
- Preparing the Lab for Inspection

Hematology
- A practical Approach to the Diagnosis of acute Leukemia
- New and Old tests in Management of Hematolgical Malignancy
- Thrombophilia- " The Clot Thickens"
- Platelet Function and Von Willebrand

Microbiology
- Bioterrorism and its Implication for an Atlantic Canada Province
- Routine Isolation and Identification methods of Fungi
- Introduction to Molecular Biology Techniques in the Clinical Laboratory
- Toxigenicity and Drug Resistance
- Laboratory Acquired Infections: History and Prevention's
- Parasitology
- Nugent Scoring

Cytology
- Bronchioalveolar Lavage
- AGUS – Atypical Glandular Cells

Management
Quality & Quality Systems
Quality Self Audit
Supervising for Quality
Decision Making
Conflict in the Workplace
Preparing to Lead

General
Alternative Therapies: From Acupuncture
How to deal with crisis in the Workplace
Allergy Illumination
CSMLS(TBA)

Continuing Education Committee Report

The CE committee held a teleconference meeting on February 20. A new representative for the Edmundston academy was welcomed - Charlene Laforge. We are looking for a new representative for the Moncton academy, replacing Marie Josee Duchesne (who's term is up), and a temporary replacement has been found for Shasta Barrieau in Miramichi – Lisa McCarthy. There will be an updated list of the CE committee contacts circulated as information becomes available.

At the February teleconference, we reviewed the responsibilities of the CE committee pertaining to the PDP program and CE activity planning. A request was made for input into CE planning. All academy CE representatives have a copy of the CE questionnaire, and all members are encouraged to pass on any ideas for future workshops or seminars to your local representative, or myself. Our next meeting will be a face to face working meeting in early June. We will be endeavoring to plan provincial workshops, starting in the fall of 2002, and developing a CE resource material package for CE academy reps, to enhance the availability of information for our members. The resource manual for conference planning remains a work in progress. As President Elect, I have the responsibility of chairing the committee to develop this manual, and we hope to have a usable format by the end of 2002.

APSC 2002 was held in Edmundston May 3 and 4, and was well attended. In addition to the bilingual scientific program, the social event on Friday night was a huge success, and 10 exhibitors were present. Other upcoming conferences are:

Maritech 2002, to be held in Charlottetown at the Prince Edward, Thursday, Nov.21 and Friday, Nov.22 – look for the preliminary program in this issue of the Analyzer.

APSC 2003, to be held at the Howard Johnson's in Fredericton May 1-3, for all you keeners who want to get your requests in!

Fredericton and Saint John academies held educational lectures during National Medical Laboratory Week 2002. Moncton held an education day April 29, which included 4 lectures – 2 each in French and English. The ACR&PP have been busy reviewing applications for the PDP, and issuing certificates. Congratulations to all whom have decided to take part in this program! (And by the way, the certificates are really nice!!) I encourage everyone to continue their professional development activities. New Brunswick continues to be a leader in participation in continuing education! The CE committee is interested in hearing about any member's CE activity (certificates, programs, success stories, and even problems/complaints), so please let your rep know!

Respectfully submitted,
Janet Reid, Continuing Education Chair

Letters to the Editor :

I would like to thank the Board of the NBSMLT for the Congress 2002 grant that I received. The 2002 Congress was definitely an experience to remember and I truly appreciate the opportunity to travel to Calgary to attend it. It was the first time that the CSMLS, CAP, and the CSCC got together in this way. I guess if I had to recall an event that made my trip truly memorable, I would have to say it was when Margie Flynn made her speech as President at the opening ceremonies, very nice Margie, you made the Easterners' proud. Of course the chocolate fountain at the reception that followed came in as a close second. The selection of lectures were very good, but it made it hard to decide on which ones to attend. I was able to attend 14 lectures during the week. Attending Congress is a great way to meet new people, learn new things and generally have fun.

Susan Findlater, MLT RT

Dear Madam Editor,

I attended the APSC in Edmundston in May. I would like to extend my congratulations to the Edmundston Academy for a job well done.

The sessions were interesting and informative and covered a wide variety of subjects. The disco night was great fun and everyone enjoyed themselves. Add to that the ***delicious*** cinnamon buns, and what more could a person want?!

Thank you to everyone for a great conference.
Anne Robinson

Editor's note:

The Edmundston Academy really knows how to throw a party.. (the lectures were very interesting as well.)

Congratulations to Susan Findlater and Marty White, the recipients of the NBSMLT Congress Grants for 2002.

Luc Levesque, a technologist at the Lameque facility of the Nor'est Health Care Region, was nominated by Daniel Arseneau for the 2002 CSMLS David Ball Award. Although not selected by the CSMLS Awards Committee, his contribution to the community, through volunteer service, was noted by the committee as impressive.

The NBSMLT would like to extend a "HUGE" Thank You to the following volunteers, without whom the operations of the society would not run.

The many countless hours they spend working on your behalf often go unrecognized, so we would like to take this opportunity to point them out and say "Thanks"!

Thank you as well to anyone we may have forgotten.

Heather Grant
Colleen Moran
Bev Ross
Brenda Mills
Shasta Taylor
Rachelle Dupuis
Tracey Noddin
Virginia Coles
Charlene Collins
Linda Turgeon
Bernadette Muise
Marie Josee Duchesne
Susan Atkinson
Heather Graham
Sandra Rooney
Guylaine Michaud
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Gisele Rushton
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Brandi Stevenson
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INUVIK REGIONAL HEALTH AND SOCIAL SERVICES BOARD

GENERAL DUTY LABORATORY TECHNOLOGISTS (2)

Indeterminate & Locum Relief

Inuvik Region, Northwest Territories
Reference # 2002-94-502
Closing Date: OPEN

The Midnight Sun in the North.
Come and experience it!

The new regional hospital is currently under construction, to replace the current 42-bed regional facility. Gas and oil exploration is expanding in the Beaufort Delta and Sahtu areas. With the populace growing, we require qualified health care professionals to ensure consistent and essential health services are maintained and provided by knowledgeable and comprehensive team players.

You will be responsible for general duties in Haematology, Coagulation, Chemistry, Microbiology and Blood Banking on a rotational basis with participation in the on-call rotation for after hour coverage.

REQUIREMENTS:

- Graduate of a recognized General Medical Laboratory Technology Program.
- Current Registration with C.S.M.L.S. as a General Duty Medical Laboratory Technologist (A copy is required as part of the application)
- Minimum of one (1) year recent relevant experience.
- Ability to work in a cross-cultural environment.
- A satisfactory Criminal Records Check is required

SALARY RANGE: $26.13/hr ($50,954/annum) to $29.63/hr ($57,779/annum)
NORTHERN ALLOWANCE: $4.16/hr ($8,112/annum).
Relocation Assistance and additional benefits.

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Tel (867) 777-8060 Fax (867) 777-8014 Toll-free:1-877-445-4482
E-mail: irhssb_humanres@gov.nt.ca Webpage: www.irhssb.nt.ca

thank all those who apply and only candidates selected for further consideration will be contacted.
Affirmative Action Employer – eligibility must be clearly stated. Smoke-free Work Environment.
Resumes from this competition may be applied to future vacancies as they occur.

Attention: All Retired NBSMLT Members
A l'attention de tous les membres de l'ATLMNB à la retraite

Memo From The Registrar Janet Kingston
Note de Janet Kingston, registraire

To retain membership in the Society, please complete the following and return to the Registrar. Cost of membership is $30.00 for retired members starting in the year 2000. You will receive applicable publications and correspondence. Please note: members must contact CSMLS *directly* to obtain CSMLS Retired membership.

Afin de conserver votre statut de membre de l'Association, veuillez remplir le formulaire ci-dessous, puis le retourner au registraire. Le prix d'adhésion à l'Association est de $30. pour les membres retraités. Vous recevrez ainsi, les publications et la correspondance appropriées. S.V.P. veuillez noter que les membres retraités doivent contacter SCSLM directement afin d'obtenir le statut de membre à la retraite de la SCSLM.

CSMLS ID# / No. de membre _____
Name / Nom _____
Address / Adresse _____
City / Ville _____
Postal Code / Code postal _____
Date of Retirement / Date de prise de retraite _____
Telephone number / Numéro de téléphone _____

Please Mail To / Veuillez retourner à l'adresse suivante:
Janet Kingston, Registrar PO Box 20180, Fredericton, NB E3B 7A2

Notification of Address / Employment Change
Avertissement de Changement D'Adresse / Emploi

Please note that all changes must be made with **BOTH** the NBSMLT and CSMLS.
Attention: Vous devez aviser l'ATLMNB et le SCSLM séparément de tous vos changements

Name /Nom _____

Old Address / Ancienne adresse _____

New Address / Nouvelle adresse _____

Previous place of employment / Ancien lieu d'emploi _____

Present place of employment / nouveau lieu d'emploi _____

Discipline / Discipline _____

Please Mail To / Veuillez retourner à:
Janet Kingston, NBSMLT, PO Box 20180, Fredericton, NB E3B 7A2

Estrogen:

J. MacLeod

Estrogen is a group of hormones primarily responsible for the development of female sex organs and secondary sex characteristics. While estrogen is one of the major female sex hormones, small amounts are found in males.

Estrogen levels are a valuable tool in the investigation of unexplained abnormal menstrual cycles, abnormal or heavy bleeding, infertility problems, symptoms of menopause or any other hormone alterations. They are also used to test for fetal-placental competence during the early stages of pregnancy as well as for the evaluation of hormone levels in males with the presence of female-like characteristics. There have been over thirty different forms of estrogen described; the most common forms are estrone (E1), estradiol (E2) and estriol (E3).

Estrone (E1)

Estrone is the major estrogen present after menopause. It is derived from metabolites from the adrenal gland and is often made in adipose (fat) tissue. During menopause, estradiol levels decrease and follicle stimulating hormone (FSH) levels increase due to the cessation of ovulation. Reduced levels of estradiol have been implicated in the on-set of osteoporosis and increased incidence of heart disease in postmenopausal women. Hot flashes, night sweats, insomnia and/or amenorrhea are symptoms of menopause, which can be controlled and/or improved by hormone replacement therapy. (Estrogen is given at the smallest dose consistent with relief of symptoms.) Hormone replacement therapy is controversial because some reports indicate that such treatment may increase the incidence of uterine cancer. Absolute contraindications include a personal or family history of breast or genital cancer or of phlebitis. Estrone levels are useful in the diagnosis of ovarian tumors, Turner's syndrome, and hypopituitarism. In males it may help in the diagnosis of gynnomastia (the abnormal formation of large mammary glands) or in the detection of estrogen producing tumors.

Estradiol (E2)

Estradiol is produced in women mainly in the ovary and in the testes and adrenal glands of men. It is important for female sexual differentiation during gestation. At the onset of puberty, estradiol is responsible for the development of secondary sex characteristics in the female. After puberty it maintains the normal structure and function of accessory sex organs, including the regulation of the menstrual cycle. At menopause, cessation of ovulation decreases serum estradiol and elevates FSH levels.

Estradiol plays an essential role throughout the human menstrual cycle. During the early follicular phase, the estradiol level is relatively constant and low. By day seven the dominant follicle is established and the estradiol level rises significantly. The elevated estradiol level suppresses the FSH level and triggers a rapid rise of leutenizing hormone (LH) The estradiol level falls significantly as LH reaches its peak. Normally ovulation occurs 10-12 hours after the LH peak and 24-36 h after the estradiol peak. During the luteal phase the estradiol increases achieving a maximum level about 8 days after ovulation. The elevated estradiol level is involved in the regression of the corpus luteum. Unless fertilization of the ovum takes place, the estradiol level decreases, signaling the start of a new cycle.

Since the cyclic rise and fall of estradiol reflect follicle maturation, estradiol measurement is a valuable tool for the assessment of sexual development, etiology of amenorrhea, causes of infertility and menopause. Both the absolute estradiol concentrations in serum and its temporal changes are useful in monitoring follicle development and predicting ovulation. This provides information on the timing of fertilization during a natural or stimulated cycle.

Normal levels of estradiol provide for proper ovulation, conception and pregnancy, in addition to promoting healthy bone structure and regulation of cholesterol levels in females. Estradiol levels can help evaluate ovarian function as well as help in the differential diagnosis of amenorrhea (menopause vs. pregnancy vs. medical problem) Estradiol is sometimes used to monitor menopausal hormone replacement therapy.

In associated reproductive technology (ART) serial measurements of estradiol are used to monitor follicle development in the ovary days prior to in-vitro fertilization. In IVF programs, GnRH-agonists are used for ovarian suppression, i.e. the patient is in a medically induced ovarian insufficiency state. It is important to know that the ovarian production of estradiol is very low before gonadotropin stimulation is commenced. During gonadotropin stimulation protocol, estradiol levels are monitored daily to evaluate the efficacy of the treatment and target the optimal timing of HCG administration for oocyte retrieval. Estradiol concentration along with ultrasound monitoring also allow for estimation of the number and maturity of follicles. Sequential estradiol concentrations are closely monitored to adjust the gonadotropin dosage in order to avoid hyperstimulation which might result in ovarian rupture. A rapid and accurate assay at high estradiol concentration can be helpful in order to aid the physician in making the correct clinical decision.

Estriol (E3)

Estriol is the major estrogen in pregnancy with relatively

(Continued on page 19)

Estrogen:

(Continued from page 18)

large amounts produced in the placenta, from precursors produced by the fetal adrenal glands and liver. Estriol levels start to rise in the eighth week of pregnancy and continue to rise until shortly before delivery. Serum estriol circulating in the maternal blood is quickly cleared out of the body. Each measurement of estriol is a snapshot of what is happening with the placenta and fetus, but there is also natural daily variation in the estriol level. Estriol along with alpha fetoprotein (AFP) and human chorionic gonadotropin (HCG) tests are used to assess the risk of carrying a fetus with certain abnormalities such as Down syndrome. Serial (multiple) estriol levels may be ordered to look for a trend, a rise or fall in the estriol level over time. Unconjugated estriol (estriol not bound to sex hormone binding globulin) is often measured in the 15^{th}-20^{th} week of gestation as part of the triple screen.

Specimen collection:

Serum is required for estrogen testing. Collect blood sample and deliver to the lab on ice as soon as possible. Serum samples may be stored for 48 hr at 2-8 degrees Celsius. If testing is delayed for more than 48 hr, freeze samples at –20 degrees. Frozen samples should be thawed at room temperature and mixed thoroughly before use. Thawed samples should not be refrozen. In some laboratories estrogen testing is performed on 24-hour urine samples and on fresh saliva. Blood, urine and saliva results are not interchangeable. The estrogen is being tested for will determine the sample type.

Estradiol:

Expected values and interpretation:
{Based on serum analysis at The Moncton Hospital using Immuno analyzer (Bayer)}

Male:		48-172 pmol/L
Female:	Follicular Phase	95-580 pmol/L
	Mid-cycle	253-1336 pmol/L
	Luteal Phase	187-804 pmol/L
	Post-Menopausal	0-172 pmol/L

It must be remembered that a diagnosis cannot be made solely based on one test result. Increased or decreased levels of estrogen can be seen in many metabolic conditions. Estrogen levels vary on a day-to-day basis and throughout the menstrual cycle. Trends in estrogen levels, rising or lowering over time, rather than a single value is required for proper diagnosis.

Criteria for rejection:
Estradiol results maybe affected by:
Hemolysis >1000 mg % of hemoglobin
Lipemia >14.7 mmol/L of triglycerides
Uremia > 71.4 mmol/L of urea
Icteric > 68 µmol/L of bilirubin

For Your Information:

Beyond daily and cycle variations, illnesses such as hypertension, anemia and impaired liver and kidney function can affect the estrogen levels in the body. Some drugs such as adrenocorticosteroids, ampicillin, estrogen-containing drugs (i.e. oral contraceptives) phenothiazines and tetracyclines can increase estrogen levels, as can glucose in the urine and urinary tract infections. Drugs that may decrease levels include clomiphene. The menopausal change is slow and usually takes two to five years to complete. During the so-called peri-menopausal period, hormone levels can fluctuate from high to low and from one month to the next. Some months a woman may have a period but then go for several months without a period. It is important to note, that during this time a woman may still be able to get pregnant. Menopause happens naturally as a woman ages, occurring anytime after the age of 35, but the typical onset is in the late 40's. Menopause can also occur for other reasons, including the removal of ovaries for cancer or other medical reasons like endometriosis, excessive exposure to radiation or chemotherapy, pituitary gland disorders or very poor health maintenance.

A proposed alternative to hormone replacement therapy is phytoestrogens. Phytoestrogens are estrogen-like compounds from plant sources. The two main classes are isoflavones found in soy products, and lignans, found in whole grains and some fruits and vegetables. Initial studies have shown the relief of some menopausal symptoms, such as hot flashes, but there is more research yet to be done.

Environmental estrogens are chemicals either natural, such as plant sources, or man-made, such as the insecticide DDT, which mimic the effect of estrogen and may cause disorders such as infertility, overgrowth of vaginal lining, premature breast development and feminization in young males. They tend to stay in the body for long periods of time and are being studied for their long-term effects.

References:
1. Chemistry –Immuno Manual, The Moncton Hospital
2. Chemistry – ACS:Centaur Assay Manual, The Moncton Hospital
3. www.labtestsonline.org
4. Clinical Chemistry Theory, Analysis and Correlation, Kaplan & Pesch
5. Mayo Clinic Interpretive Handbook
6. Basic and Clinical Endocrinology, Greenspan

IT HAS BEEN SAID THAT THERE ARE TWO THEORIES TO ARGUING WITH WOMEN. NEITHER ONE WORKS !

From the Editor:

As summer begins and with the good news of a tentative contract agreement from our union, it is time to rest, reflect and plan for the fall. Submissions, ideas, articles of interest are always welcome.

Please send them to the editor at…
Bernadette Muise ***analyzer@nbnet.nb.ca***
C/o Transfusion Medicine
The Moncton Hospital
135 MacBeath Ave.
Moncton, NB E1C 6Z8

In the interest of spending our society funds wisely we are undertaking a survey of the membership.

Please take the time to complete the survey regarding the newsletter distribution and return it to me as soon as possible. Thank you.

Remember to check out the Analyzer on our website at ***www.nbsmlt.nb.ca***

NBSMLT MLT Analyzer

Bernadette Muise, Editor

June, 2002

I am sending out this survey to determine the present needs of the membership regarding the NBSMLT newsletter. As changes occur, it is prudent to re-assess our requirements.

At present, there are some Technologists who receive personal copies and some share department copies. With the electronic copy available, some might prefer to discontinue the paper copy. Departments may want to reduce the numbers of copies being sent to them. If we can decrease the numbers of copies being printed, we may reduce some of the costs associated with the production of your newsletter.

Please take the time to fill out this survey and return to the Editor by **September 1, 2002**
(Make copies as appropriate)

Name Of Hospital	Present Number of Copies	
	English	French
Personal Copies		
Department Copies		

Name Of Hospital	Number of Copies Required (Sept 1 2002)	
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