

# THE PATHOLOGY CENTER

# NEWSLETTER

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## IMMATURE RETICULOYTE FRACTION (IRF)

**By: Dr. Deborah Perry**

Reticulocytes (retic) are immature erythrocytes in the final stage of differentiation. The name reticulocyte comes from the microscopic characteristic of the cells after staining with supravital basic dyes that selectively stain the reticulum. The reticulum is composed predominantly of protein and ribosomal RNA.

Increased reticulocyte counts are seen in response to acute hemorrhage or hemolysis, treatment of a nutritional deficiency (iron, B12 and /or folate), and other causes of bone marrow erythropoiesis.

Reticulocytes can be measured by either manual or automated methods, providing a reticulocyte percentage and absolute number. Automated reticulocyte counts are performed using flow cytometric methodology, which evaluates the number of mature red blood cells, reticulocytes and platelets.

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## PROTIME SPECIMEN STABILITY

Protimes are now acceptable UNSPUN AND REFRIGERATED IF RECEIVED WITHIN 24 HOURS. The specimen no longer has to be split off and frozen or rushed to the laboratory. The protime can be drawn, refrigerated and sent to The Pathology Center as long as it is kept refrigerated and we receive it within 24 hours. However, if a PTT is also ordered the plasma will have to be split off and frozen.

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## ePathLink

ePathLink is the latest module of our Cerner Laboratory Information System to go live. ePathLink is an online Web-based laboratory management system. ePathLink was designed to allow you to perform speedy patient registration, order entry, and result viewing. These applications give you the ability to print requisition forms, confirm registration and order information, automatically print Advance Beneficiary Notices (ABN), and view results. Clients first access our ePathLink server through Windows Internet Explorer before they can enter and transmit an order to us. Clients can access our server in four ways; modem to modem, modem to firewall, modem to intranet, or a network connection. After clients register, they can maintain a continuous connection as needed.

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### Reticulocyte (continued)

The reticulocyte ratio is calculated as follows:

$$\text{RET\%} = \frac{\text{particle count in retic zone}}{\text{particle count in mature RBC}}$$

Plus

$$\text{Particle count in retic zone} \times 100$$

The absolute reticulocyte count is calculated as follow:

$$\text{RET\#} = \text{RET\%} \times \text{RBC}/100$$

The new Sysmex hematology analyzers at Methodist Hospital laboratory now provide an additional reticulocyte parameter termed the immature reticulocyte fraction (IRF). The IRF is a calculated parameter representing the number of young or immature reticulocytes as a percentage of all reticulocytes.

The IRF reflects the bone marrow response to disease or therapy earlier than the absolute reticulocyte count or the reticulocyte percent. This is clinically useful to evaluate the bone marrow response, or lack there of, to recovery from bone marrow suppression (chemotherapy), bone marrow recovery from transplantation and bone marrow response to nutritional supplementation.

An order for reticulocyte count will now be reported as follows and include the reference ranges as noted:

- Reticulocyte percentage (%) ----- 0.5 - 1.8%
- Reticulocyte absolute number----- 0.03 – 0.09
- Immature Reticulocyte Fraction (IRF) –5 –22%

## SPOTLIGHT ON SPECIMEN CONTROL

The Specimen Control department at The Pathology Center is staffed 24 hours a day 7 days a week. Keith Fisher, Team Leader, has the responsibility of seeing that all specimens are registered correctly and distributed to the correct testing area in a timely manner. In-patient samples arrive via the pneumatic tube system from the floors and the Cancer Center. They are accessioned into the computer system, and bar coded before transfer to the testing area.



Rosalie Soodsma and Keith Fisher

Keith's staff is responsible for over 1900 specimens that arrive daily from doctors offices, hospitals, clinics and nursing homes. Most of the specimens arrive by courier from 4pm to Midnight. Rosalie Soodsma, Assistant Team Leader, helps the evening staff sort specimens and paperwork as the couriers arrive. All information is entered into the computer and barcodes attached to tubes before being sent to the testing areas.

The Specimen Control staff is also responsible for preparing and sending tests that we do not perform to our reference laboratory. Keith says we send

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## Appointments

Dr. Diane Nevins has been appointed Medical Director of the Cytopathology Laboratory. Dr. Nevins is subspecialty certified in Cytopathology, having completed fellowship training at the University of Rochester in Rochester, New York. Dr. Nevins joined the Pathology Center in 2001.

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Dr. Stacey McManigal has been appointed Medical Director for transfusion medicine (Blood Bank). Dr. McManigal joined the Pathology Center in 2002. In addition to her anatomic pathology duties, Dr. McManigal consults at two rural hospitals monthly and works on coagulation and hematology projects.

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Dr. Thomas Williams, Pathology Center Medical Director, has been appointed to the Clinical Laboratory Improvement Advisory Committee (CLIAAC). The committee provides scientific and technical advice to federal health officials regarding the need for, and the nature of, revisions to the standards under which clinical laboratories are regulated; the impact on medical and laboratory practice of proposed revisions to the standards; and the modification of the standards to accommodate technological advances.

ePathLink fully supports the following laboratory activities:

- Logging onto ePathLink
- Registering a patient
- Searching for a patient
- Creating an encounter
- Searching for an encounter
- Adding insurance information
- Entering collections/orders parameters
- Adding procedures to an order
- Printing requisition forms, labels and Advanced Beneficiary Notices (ABN)
- Submitting an order
- Modifying or canceling an order
- Creating a packing list
- Viewing results
- Printing clinical reports
- Print daily reports

The Pathology Center will have ePathLink available to a limited number of facilities this year but plan to expand to a larger client base in 2005.

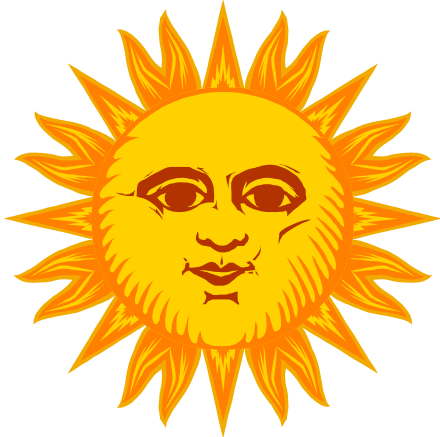
### Specimen Control (continued from page 2)

about 70 samples a day to ARUP, our reference laboratory in Salt Lake City, Utah. Last year's computer interface to ARUP has helped eliminate paper work, and given us a faster turn-around time for reports. Tests are sent to other reference laboratories as needed.

#### Specimen Control Staff



The Pathology Center was given Accreditation “with distinction” after a two day inspection of our laboratory by the College of American Pathologists.



## REMINDERS

- DO NOT SEND NEEDLES ATTACHED TO SYRINGES!! This is an OSHA violation and very dangerous for the safety of our employees.
- Please do not use prescription pads to fax lab orders to our reception area for patient draws. We are unable to read the information from the prescription pad after it has been faxed.
- **Remember for the convenience of your patients, we have a drawing station at Methodist HealthWest – first floor – north entrance. Fax orders to 354-0504. We have an experienced phlebotomist on duty:**

### NEW HOURS EFFECTIVE AUGUST 23

- **7:00 AM – 2:00 PM Monday & Wednesday**
- **7:00 AM – Noon Tuesday, Thursday, and Friday. No appointment necessary. No waiting.**

This newsletter can also be found on our website: [www.thepathologycenter.org](http://www.thepathologycenter.org)

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