


DOCTOR'S
CORNER

by Dr. Richard Johnson
Dunbarton



RED BLOOD CELLS

Remember last month we learned that the red blood cell (RBC) is the only cell in our body that does not have mitochondria.

What are mitochondria? If you missed it, check out the May issue. I thought it a good idea to take a closer look at the red blood cell. Of course, you could simply 'google it' and learn a lot, probably more than you want or need! Let me in this short article, just hit the highlights of this very important cell in our bodies. We cannot live without the RBC. In the medical world the red blood cells are called erythrocytes. That word comes from the Greek erythros meaning 'red' and kytos meaning a hollow vessel. Bottom line, the most important function of the RBC is to carry oxygen to every cell in your body.

The RBCs are produced in our bone marrow, and as they mature, they move into the blood stream. Their lifespan is approximately 120 days. The biconcave red blood cell is 7-8 micrometers in diameter. It is packed with hemoglobin which makes up 33% of its weight; water makes up the rest of the cell's weight. Each RBC contains about 300 million hemoglobin molecules. Each hemoglobin molecule is made up of four globular proteins, each a polypeptide chain folded onto itself. Within each chain is heme, a flat organic ring which holds an iron atom in its center, and it is onto these iron atoms that oxygen molecules bind and are carried throughout the body. Hence each hemoglobin molecule can carry four oxygen molecules, and there are 300 million hemoglobin molecules in each RBC... you do the math.

Remember, since the RBC does not have mitochondria, it is not making energy and therefore not using up the oxygen that it is carrying. (1) When oxygen combines with the iron in hemoglobin it absorbs blue-green light and reflects red light... hence the name red blood cell and the resulting red color of blood itself.

When you are examined by a health care professional you may have your blood analyzed for the hematocrit which is the percentage of RBCs in the blood (N for women: 37%-47% and N for men: 42%-50%). Also, the amount of hemoglobin can be measured (N for women: 11.6-15 grams per deciliter and N for men: 13.2 - 16.6 grams per deciliter). A deciliter is one-tenth of a liter, or 100 ml. Finally, these remarkable biconcave cells are extremely flexible and can move through 2-3 micrometer capillaries even though they themselves are 7-8 micrometers in diameter. A micrometer is one-millionth of a meter or 0.001 millimeter. Old (120 days) and damaged red blood cells are totally recycled by the liver and spleen where hemoglobin is broken down: the iron is saved and sent to the bone marrow where new RBCs are being made, the globin is broken down into amino acids to be used in making new protein, and the heme (the organic ring in each globin molecule that holds the iron) is made into bilirubin which has antioxidant and anti-inflammatory properties. Some bilirubin is excreted in bile which aids the breakdown of fatty acids in the small intestine.

There you have it; the design of the RBC is simply remarkable; we cannot survive without them. When their life is over, they are essentially totally recycled; nothing is wasted. Those of you who design things can appreciate that complex entities and systems that function with a purpose and then recycle themselves don't happen by chance.....you design them!

(1) A 1-minute video is here: <https://www.britannica.com/video/Learn-how-hemoglobin-proteins-blood-transport-oxygen-lungs-to-tissues/-246612>



KIDS FUN FRIDAY NIGHTS GRADES K-3

WITH: CREATIVE KIDS CLUBHOUSE



KIDS CAMPING & PIZZA PARTY

Get ready for a magical kids night out with Camping & Game Night! Students grades K-3 are invited for an evening of cozy, camp-style fun, games, and crafts. We'll transform the space into a mini-campsite filled with imagination, laughter, and adventure.

As the night winds down, kids will snuggle in for special games. It's a safe, supervised night of fun while parents enjoy a well earned evening off.

What to bring: Wear PJ's, a sleeping bag or blanket, a pillow, and a favorite stuffy.

Date: Friday, August 14 – **Time:** 5:30 – 8:30 PM

Fee: \$55 Bow Residents / \$60 Non-Residents



UNDER THE SEA BEACH PARTY

Dive into an evening of ocean-themed fun! Kids will become sea creatures and beach explorers in this under the sea beach party designed just for grades K-3. We'll play ocean-inspired games like shark tag, take crab walks, create colorful fish & jellyfish crafts, and enjoy a beach-style snack break. To wrap up the night, kids will relax on their beach towels for a calming ocean story - bringing the beach indoors for a night of imagination and underwater adventure.

Date: Friday, July 17 – **Time:** 5:30 – 8:30 PM

Fee: \$40 Bow Residents / \$45 Non-Residents



Location: Bow Community Building
3 Bow Center Road



www.BowHh.myrec.com



603-223-3920





HOSPICE
*Home
&
Garden*
TOUR

WEDNESDAY, JULY 15, 2026 10 A.M. – 4 P.M.




Summer is just around the corner, and that means one of the Lakes Region's most beloved traditions is back. Tickets are now on sale for the Granite VNA Hospice Home & Garden Tour, and we'd love for you to join us.

This self-guided tour features a wonderful mix of properties on or near the waterfront of Lake Winnepesaukee. From sprawling estates to charming cottages, open-air retreats to rustic getaways, each is welcoming and rich with family history, that reflects the unique character of the homeowners, and the Lakes Region.

It's a great way to spend a summer day while supporting Granite VNA Hospice care for patients and families right here in Central New Hampshire. To purchase your tickets by credit card, visit the Granite VNA website at www.granitevna.org



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