

# Red Blood Cells

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Red Blood Cells (erythrocytes) make up half the volume of human blood and is the major contributor to blood viscosity. Each cell is shaped like a disk, slightly concave on top and bottom, like a doughnut without the hole poked completely through.

The job of the erythrocytes is to transport oxygen and carbon dioxide around the body.

Mature erythrocytes lack a nucleus (hence the biconcave shape) and have few organelles. Erythrocytes lack mitochondria and generate ATP (energy) by anaerobic mechanisms, therefore they do not consume any of the oxygen they are transporting, making them very efficient oxygen transporters.

The erythrocyte must rely on what it already has stored of proteins, enzymes and RNA as it cannot manufacture these itself.

Hemoglobin, an oxygen carrying globular protein, constitutes 33% of the red blood cell weight. Other proteins are present but they function mainly to maintain the plasma membrane or promote changes in the erythrocyte shape.

## Hemoglobin

Hemoglobin is an oxygen carrying globular protein. Each hemoglobin is 5% heme, an iron-containing pigment, and 95% globin, a protein. The iron atom is the binding site for oxygen and plays a key role in binding oxygen (forming oxyhemoglobin) and releasing it (forming deoxyhemoglobin) to the cells at the right time. As oxygen-deficient blood moves through the lungs, oxygen diffuses from the air sacs of the lungs into the blood and then into the erythrocytes, where it binds to hemoglobin. In the tissues, where oxygen levels are low, this process is reversed as the oxygen is released from the iron and then diffuses from the blood into the tissue fluid and then into the tissue cells.

As I was studying this I found it interesting to note that each hemoglobin molecule can transport four molecules of oxygen.

In Bullinger's 'Number in Scripture' we learn that the number four represents 'His creative works'.

Oxygen is symbolic for Father's Spirit. It is Father's Spirit that gives us life, just as Oxygen gives life to our physical body.

*Genesis 2:7; 'And Yahwah Elohim formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.'*

Galatians 6:8; *'For he that soweth to his flesh shall of the flesh reap corruption; but he that soweth to the Spirit shall of the Spirit reap life everlasting.'*

The iron, the part to which the oxygen binds, represents strength as evidenced in the Scriptures.

Daniel 2:40-41; *'And the fourth kingdom shall be strong as iron ... And whereas thou sawest the feet and the toes, part of potters' clay, and part of iron, the kingdom shall be divided; but there shall be in it the strength of the iron, forasmuch, as thou sawest the iron mixed with the miry clay.'*

This shows me that FATHERS CREATIVE WORKS ARE DONE BY THE STRENGTH OF HIS SPIRIT. This is the underlying meaning of the hemoglobin in the Red Blood Cells.

Psalms 33:6,9; *'By the word of YaHWaH were the heavens made; and all the host of them by the breath of His mouth... For he spake and it was done; he commanded, and it stood fast.'*

It is through the STRENGTH of HIS SPIRIT that we are CREATED a new man.

Ezekiel 36:25-27; *'Then I will sprinkle clean water upon you, and ye shall be clean: from all your filthiness, and from all your idols, will I cleanse you. A new heart also will I give you and a new spirit will I put within you: and I will take away the stony heart out of your flesh, and I will give you a heart of flesh. And I will put my spirit within you and cause you to walk in my statutes, and ye shall keep my judgements and do them.'*

Ephesians 4:23-24; *'And be renewed in the spirit of your mind; And that ye put on the new man, which was created according to Elohim in righteousness and true holiness.'*

It is because of the functioning of the erythrocyte, transporting oxygen, that we live, work and play. So the message here is that all the works that we do here on earth, as pre-ordained by Father, are done by the strength of His Spirit. This is the message of the erythrocyte, and it corresponds with the message written in the Scriptures

Philippians 4:13; *'I can do all things through Messiah which strengtheneth me.'*

Hemoglobin also carries waste carbon dioxide from the tissues to the lungs, where the carbon dioxide is exhaled. By removing carbon dioxide, hemoglobin also helps to maintain a stable acid-base balance in the blood. The carbon dioxide becomes attached to the amino acids of globin, rather than the heme group, forming carbaminohemoglobin.

Unhealthy practices of this world like smoking, causes carbon monoxide to find

attachment sites to the erythrocyte and once this happens the erythrocyte is forever incapacitated as it can no longer carry any oxygen. The result is that the erythrocyte will die and this puts more pressure on the spleen and the erythrocyte producers - bone marrow. We need to ask Father that He fills us with His breath, His Spirit, symbolised by Oxygen, so that we can have life.

### **Life Span of an Erythrocyte**

Talking of the life span of erythrocytes, it is interesting to note that erythrocytes normally function for 80-120 days. Let us take a look at the Scriptures.

Genesis 6:3; *'And YaHWaH said, My spirit shall not always strive with man, for that he also is flesh: yet his days shall be an hundred and twenty years.'*

Father says 'his days shall be an hundred and twenty years'. Remember, life is in the blood and the erythrocyte can live for up to 120 days! A remarkable 'coincidence'!

One hundred and twenty is three times forty ( $3 \times 40 = 120$ ) and applied to time it means a **divinely appointed period of probation.**

Later, the days of our years were reduced to 70 as we see in Psalm 90:10;

*'The days of our years are threescore years and ten (70); and if by reason of strength they be fourscore years (80), yet is their strength labour and sorrow; for it is soon cut off, and we fly away.'*

The number seventy signifies **spiritual order carried out with all spiritual power and significance.** This is significant as we just learned that the erythrocytes carry oxygen which is symbolic of the spirit. Here we see that our lives here on this earth are led by the Spirit and not the flesh - Father is in control!

In Psalm 90:10 it also says that *'if by reason of strength they (the days of our years) be fourscore (80) years...'*. The strength here, I believe, is referring to the strength of the Spirit as it is the heme/iron, representing the strength, carrying the oxygen, representing the Spirit, in the erythrocyte. If we love YaHWaH, through keeping the commandments, He will give us the strength, by His Spirit, and He will lengthen our years,

Proverbs 3:1-2; *'My son, forget not my law; but let thine heart keep my commandments: For length of days, and long life, and peace, they shall add to thee.'*

1 John 5:3; *'For this is the love of Elohim, that we keep his commandments: and his commandments are not grievous.'*

The erythrocyte has a life span of 80-120 days - we have learned now that this is not just a coincidence!

Furthermore, in Psalm 90:10 it says in the margin notes, 'yet is their boast only labour and sorrow, for it is soon cut off and we fly away'. Our life is only labour and sorrow because the full strength of the Spirit has not been unveiled within us yet. Once we come to a realisation of the fullness we will rest, rejoice and have life without end.

## **Hemopoiesis**

Hemopoiesis is the term given to the process of blood production. This process occurs in the red bone marrow where the immature blood cells are supported on a soft network of reticular fibres that border wide blood capillaries called blood sinusoids. Within this network are macrophages, fat cells and the fibroblasts that secrete the fibres. In adults, this tissue is found chiefly in the bones of the **axial skeleton** and **girdles**, and in the **proximal epiphyses of the humerus** and the **femur**.

Each type of blood cell (red and white) is produced in different numbers in response to changing body needs and different regulatory factors. As they mature, they migrate through the thin walls of the sinusoids to enter the blood. The various formed elements in the blood all arise from the same type of stem cell, the hemocytoblast, which resides in the red bone marrow. The cell maturation pathways are different, and once a cell is committed to a specific blood cell pathway it cannot change. The commitment is signalled by the appearance of membrane surface receptors that respond to specific hormones that, in turn, push the cell toward further specialization.

It is interesting to note that hemopoiesis occurs in the axial skeleton, girdles and the proximal epiphyses of the humerus and femur. Bones represent the laws and principles of YaHWaH. Within the 10 commandments, four cover our relationship to YaHWaH and the other six cover our relationships with our fellow man. The bones of the skeleton are divided in the same way; 40% being found in the axial skeleton and 60% being found in the appendicular skeleton and six yoking bones.

We know from the scriptures that life is in the blood.

Leviticus 17:11; *'For the life of the flesh is in the blood...'*

Seeing that blood is produced within the axial skeleton it would imply that it is by adhering to the first four commandments, and thereby building on a close relationship with YaHWaH, that we can receive life. As a result, these principles/bones are strengthened, and the blood, in which is life, can form optimally. **This shows that life emanates from Father and our relationship to Him.**

It is interesting to note that when the purity of the blood is to be tested, doctors look within the Sternum (Please review study on the Sternum). The Sternum represents the principle of righteousness.

However, hemopoiesis also occurs in the girdles and the proximal epiphyses of the humerus and femur. These bones do not form part of the axial skeleton, so can life also come from keeping the commandments and building up our relationships with our fellow man? In 1 John 4:10 it states that it is because Father has loved us, we love Him (by keeping the first four commandments);

*'Herein is love, not that we loved Elohim, but that he loved us, and sent his Son to be the propitiation for our sins.'*

Further down in 1 John 4:20-21 it states that you cannot love Father and hate your brother;

*'If a man say, I love Elohim, and hateth his brother, he is a liar: for he that loveth not his brother whom he hath seen, how can he love Elohim whom he hath not seen? And this commandment have we from him, That he who loveth Elohim love his brother also.'*

Remember, that if you love Father, then His love dwells in you and Father dwells in you, 1 John 4:16;

*'And we have known and believed the love that Elohim hath to us. Elohim is love; and he that dwelleth in love dwelleth in Elohim, and Elohim in him.'*

Our relationships with man (strengthened by keeping the last six commandments) is therefore based on the love of Father within us. The love for Father and the love for our fellow man is intimately linked. **True love is based on our Heavenly Father and it is in this spirit that we keep the commandments and that brings life.**

*Proverbs 3:1-2; 'My son, forget not my law; but let thine heart keep my commandments: For length of days, and long life, and peace, shall they add to you.'*

The girdles, pectoral and pelvic, connect our relationship with Father (axial skeleton), to our relationships with our fellow man (appendicular skeleton), and they, through His love, also produce blood in which is life. As seen in the study on the pectoral girdle, it is only when we take His yoke upon us that we can find rest. It is love of self that brings unrest. If we are only thinking of ourselves we cannot love our brother, and we can therefore also not love Father. It is only when we deny self, take His yoke upon us, love Father as He first loved us, that we can love and serve our brother. Then truly it can be said that out of us can flow rivers of **living** water.

*John 7:38; 'He that believeth on me, as the scripture hath said, out of his belly shall flow rivers of living water.'*

The pelvic girdle represents the stability in our ways. We have to follow the ways of Yahshua, whose ways were straight, and the only way to do this is to trust and obey. Only by walking with stability and straightness ourselves can we love and serve our brother, by being an example for him to follow, as we walk the path to ultimate life and fulfilment in Father.

Therefore the blood (in which is life) can also be produced in the proximal epiphyses of the humerus and femur as we strive to love our brother based on the love that our Heavenly Father has towards. It is only with this 'Godly love' that we can be a life giving force to our brother.

In this way the keeping of all the commandments can produce the medium in which life flows. The blood therefore does not have to be produced exclusively in the axial skeleton.

*1 John 5:1-3; 'Whosoever believeth that Yahshua is the Messiah has been born of Elohim: and everyone that loveth him that begat loveth him also that is begotten of him. By this we know that we love the children of Elohim, when we love Elohim and keep his commandments. For this is the love of Elohim, that we keep his commandments: and his commandments are not grievous.'*

In summary, we have seen that life emanates from our Heavenly Father and our relationship to Him, and it is through this relationship we learn to love Him (by keeping the first four commandments) as He has first loved us. Our love for our fellow man (strengthened by keeping the last six commandments) can only be based on the love of Father within us. Only then can we be a witness of the life of YaHWaH within us, and we may impart that blessing to those around us.

These were just some thoughts YaHWaH gave me on Red Blood Cells that I liked to share in this paper. I pray it has been a blessing to you as it has been to me. I find it so wonderful how Father is teaching me so many lessons about Him through the way he has created our bodies to function and I look forward to the time that I, and we all, may live in total harmony with Him.