

Wonderfully Made Series
Study #3: Cell Wall, Cytoplasm, & Water of Life
Bible Sermon Study Notes by Cary Rodgers, pastor

Psalms 139:14

14 I will praise thee; for **I am fearfully and wonderfully made: marvellous are thy works;** and that my soul knoweth right well.

Psalms 92:4-6

4 For thou, LORD, hast made me glad through thy work: I will triumph in the works of thy hands.

5 O LORD, how great are thy works! and thy thoughts are very deep.

6 A brutish man knoweth not; neither doth a fool understand this.

Psalms 126:3

3 The LORD hath done great things for us; whereof we are glad.

We should declare the awesome creation of God for His glory!

Isaiah 12:2-5

2 Behold, God is my salvation; I will trust, and not be afraid: for the LORD JEHOVAH is my strength and my song; he also is become my salvation.

3 Therefore with joy shall ye **draw water out of the wells** of salvation.

4 And in that day shall ye say, Praise the LORD, call upon his name, **declare his doings among the people, make mention that his name is exalted.**

5 **Sing unto the LORD;** for **he hath done excellent things:** this is known in all the earth.

The study of God's Creation declares the excellent things created by God.

Psalms 105:2, 4, 5

2 Sing unto him, sing psalms unto him: talk ye of all his wondrous works.

4 Seek the LORD, and his strength: seek his face evermore.

5 Remember his marvellous works that he hath done; his wonders, and the judgments of his mouth;

Learn and teach others about the wonderful Creation of God and rejoice in ALL the works of God.

Psalms 104:31

31 The glory of the LORD shall endure for ever: the LORD shall rejoice in his works.

Let the people know that we are fearfully and wonderfully made by the hands of God. Teach others about the anatomy and physiology of the human body. Every cell, tissues, and organs glorify our Creator.

Remember: What is the cycle of man at the cellular level?

1. Dust composed of ELEMENTS
2. Elements compose FOOD
3. Food builds BLOOD
4. Blood builds CELLS
5. Cells build TISSUES

6. Tissues build **ORGANS**
7. Man is comprised of **SYSTEMS**
8. God created **MAN**

Remember: What are the five laws of human cells?

- 1) Water
- 2) Air
- 3) Nutrition
- 4) Waste Elimination
- 5) Freedom from poison

As we continue our study about our cells you will see the excellency of God. He always does things in an order that follow the laws and statutes both spiritually and physically.

Psalms 119:73

73 Thy hands have made me and fashioned me: give me understanding, that I may learn thy commandments.

Cells are the smallest unit of life formed by the hand of God from the very beginning when He created Adam and Eve.

God thought of every minute detail when He created the human cell. It is simply amazing.

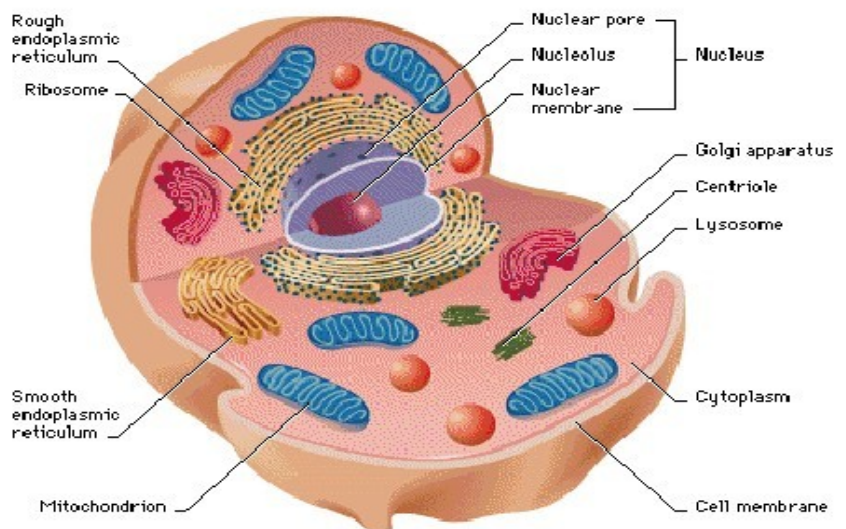
God uses the smallest things in life to do great things for the glory of God. Without the cells and its function our bodies would be greatly limited.

“From the minutest atom to the greatest world, all things, animate and inanimate, in their unshadowed beauty and perfect joy, declare that God is love.”—The Great Controversy, pp. 678

Remember, What is the basic structure and anatomy of human cells?

- 1) Nucleus
- 2) Organelles
 - Rough endoplasmic reticulum
 - Ribosomes
 - Smooth endoplasmic reticulum
 - Golgi apparatus
 - Lysosome
 - Centriole
 - Mitochondrion

- 3) Cell Body
- 4) Cellular Membrane



What is cell membrane and its location of the cell?

Compared to skin, it protects and holds the fluid cell body (cytoplasm) together.

The cell membrane is the wall of the cell with three layers to the wall with exit and entrance channels.

The outer and inner wall of the cell membrane is made of the phospholipid bilayer (looks like a veggie cheese sandwich)

The head of the phospholipid is known as the **hydrophilic head** that faces outer and the inner wall of the cell membrane.

(Hydro = water)

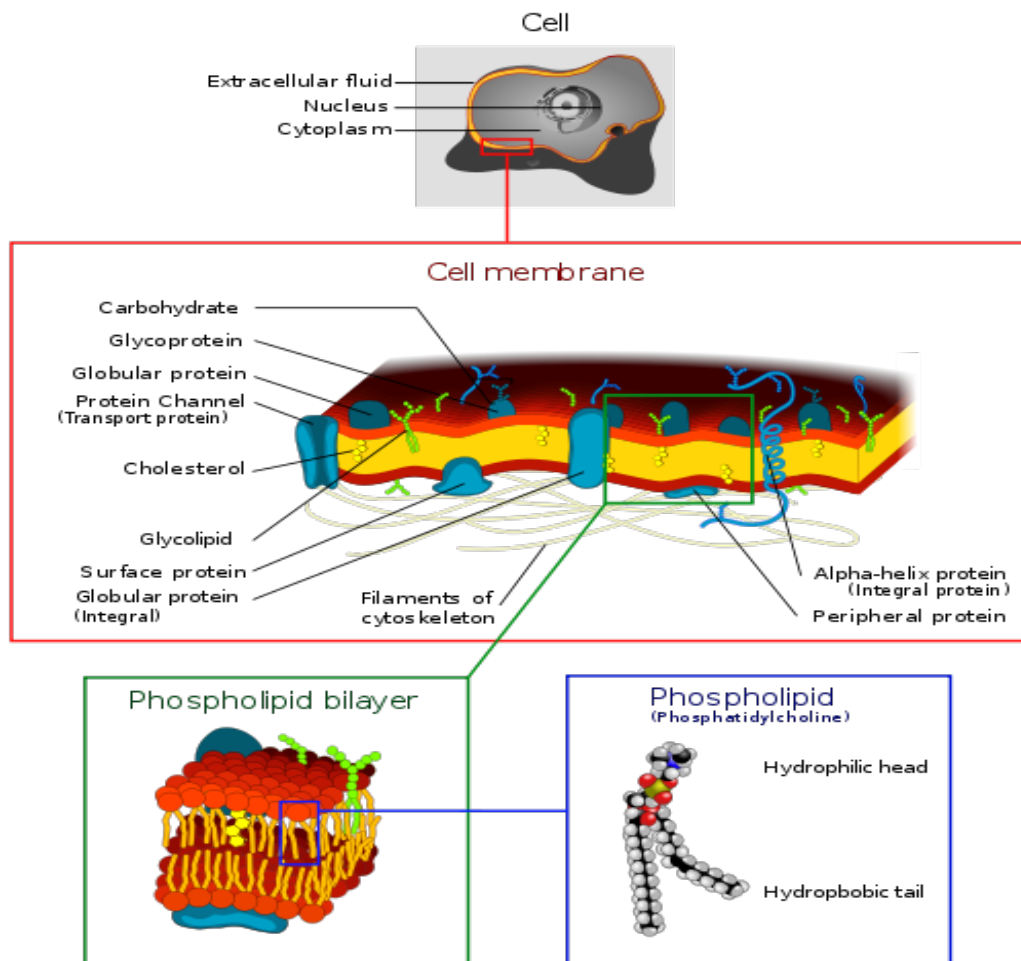
Hydrophilic = having a tendency to mix with, dissolve in, or be wetted by water.

The inner wall of the cell membrane wall is hydrophobic tail of the phospholipid

Hydrophobic = tending to repel or fail to mix with water.

See diagram for the other parts of the cell membrane:

Note: Cholesterol is like the mortar of the cell – it helps keep the cell wall together.



Glycocalyx: In addition - glycocalyx – referring to glycoprotein on the cell membrane. Type of id that the body uses to distinguish between its own healthy cells and transplanted tissues, diseased cells, and invading organisms. The slime on the outside of a fish is considered a glycocalyx.

Cell body or cytoplasm

The cell body consists of a sticky & thick substance known as cytoplasm, which is surrounded by a thin skin known as the cell membrane.

Cytoplasm Facts

It is between the cell membrane holding organelles, except for the nucleus.

Contains the main substance (hyaloplasm) [hyalo = transparent/glassy] better known as Cytosol.

The inner, granular (rough like) mass of cytoplasm is called the **endoplasm** and the outer, clear and glassy layer (jelly like) is called the cell cortex or the **ectoplasm**.

About 70% of the cytoplasm is water and the rest consists of lipids, protein, carbohydrates and salts.

Water solution is saline (soluble salt-not much) – different from the solution on the exterior of the cell.

Drinking 8 to 12 cups of water daily help keeps the cells hydrated. See the importance of drinking water. Lack of water consumption will negatively effect the cell from properly functioning which will bring on disease.

Remember the three 3's – You cannot live about

- 1) 3 weeks without food
- 2) 3 minutes without air
- 3) 3 days without water

Water is extremely important for our existence and each cell MUST have it order to function.

Spiritually Jesus is our water of life, without Him we would NOT survive. Jesus' water of life is offered freely to all humanity. Only those who have faith in Jesus will daily drink from the water of life.

Revelation 21:6

6 And he said unto me, It is done. I am Alpha and Omega, the beginning and the end. I will give unto him that is **athirst of the fountain of the water of life freely**.

Revelation 22:17

17 And the Spirit and the bride say, Come. And let him that heareth say, Come. And let him that is athirst come. And whosoever will, let him take the water of life freely.

What does Jesus tell us about this water of life?

John 4:14

14 But whosoever drinketh of the water that I shall give him shall never thirst; but the water that I shall give him shall be in him a well of water springing up into everlasting life.

This water of life is physically seen in Heaven coming from the throne of God.

Revelation 22:1

1 And he shewed me a pure river of water of life, clear as crystal, proceeding out of the throne of God and of the Lamb.

Do you thirst for the Truth? How thirsty are you?

John 7:37

37 In the last day, that great day of the feast, Jesus stood and cried, saying, If any man thirst, let him come unto me, and drink.

You cannot survive spiritually without drinking from the water of life on a daily basis.

Jesus says:

Matthew 5:6

6 Blessed are they which do hunger and **thirst after righteousness**: for they shall be filled.

David says:

Psalms 42:1-2

1 As the hart panteth after the water brooks, so panteth my soul after thee, O God.

2 My soul thirsteth for God, for the living God: when shall I come and appear before God?

Appeal... Baptism appeal

Is baptism necessary? How do you receive the gift of the Holy Ghost?

Acts 2:38-41

38 Then Peter said unto them, **Repent, and be baptized every one of you in the name of Jesus Christ for the remission of sins**, and ye shall receive the **gift of the Holy Ghost**.

39 For the promise is unto you, and to your children, and to all that are afar off, even as many as the Lord our God shall call.

40 And with many other words did he testify and exhort, saying, **Save yourselves from this untoward (crooked) generation**.

41 Then they that gladly received his word were baptized: and the same day there were added unto them about three thousand souls.

The gift of the Holy Ghost is conditional based on repentance and baptism. Now is the time to make a decision.

Jesus says in order to be born again YOU MUST be baptized by the water and the spirit.

John 3:5

5 Jesus answered, Verily, verily, I say unto thee, Except a man be born of water and of the Spirit, he cannot enter into the kingdom of God.

Next study we will look at the center command, instructions, and law of the nucleus and the DNA. The nucleus gives the instructions of each cell that is duplicated and delivered to the messenger RNA.