- The **endoplasmic reticulum** is a membrane bound maze of **interconnecting** networks that spans throughout the cell
    - This is **continuous with the outer membrane** of the nucleus
    - The inner space that proteins etc. travel through is known as the **lumen**
    - There are two types of endoplasmic reticulum:
        - **Rough** (**rER**)
            - The rER has **ribosomes** attached to its surface and is used for the production of **proteins** during **translation**. This makes molecules such as enzymes
            - However, the ribosomes are **not continuously attached**. They can detach when they are not needed and reattach when a protein needs to me made. Until then, they float in the cytosol
                - Proteins that are destined for the **cytosol**, **nucleus** or **mitochondria** are **made from ribosomes that are free in the cytosol**
                - All **other proteins** are made when the **ribosomes are attached to the ER**
        - **Smooth** (**sER**)
            - The sER **does not have ribosomes** and is used in the **production of lipids** to make molecules such as **steroids**
    - Below is a comparison of rER (top) and sER (bottom)