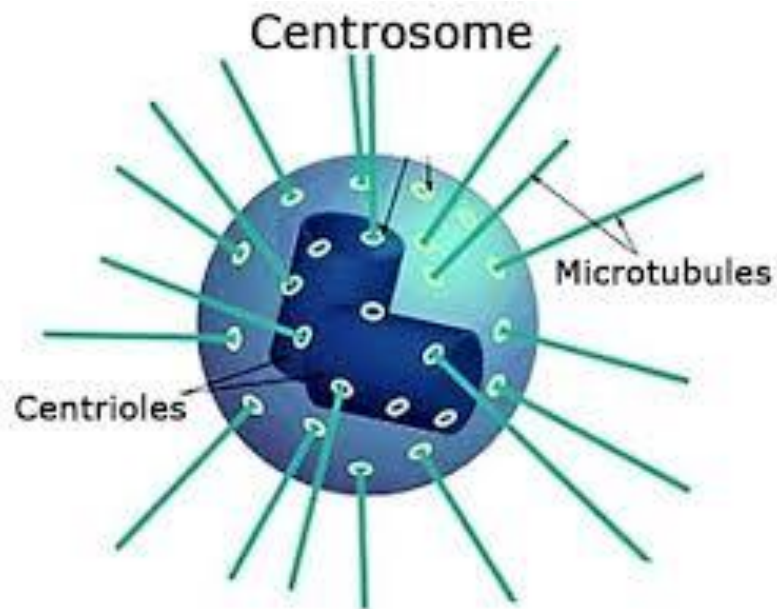


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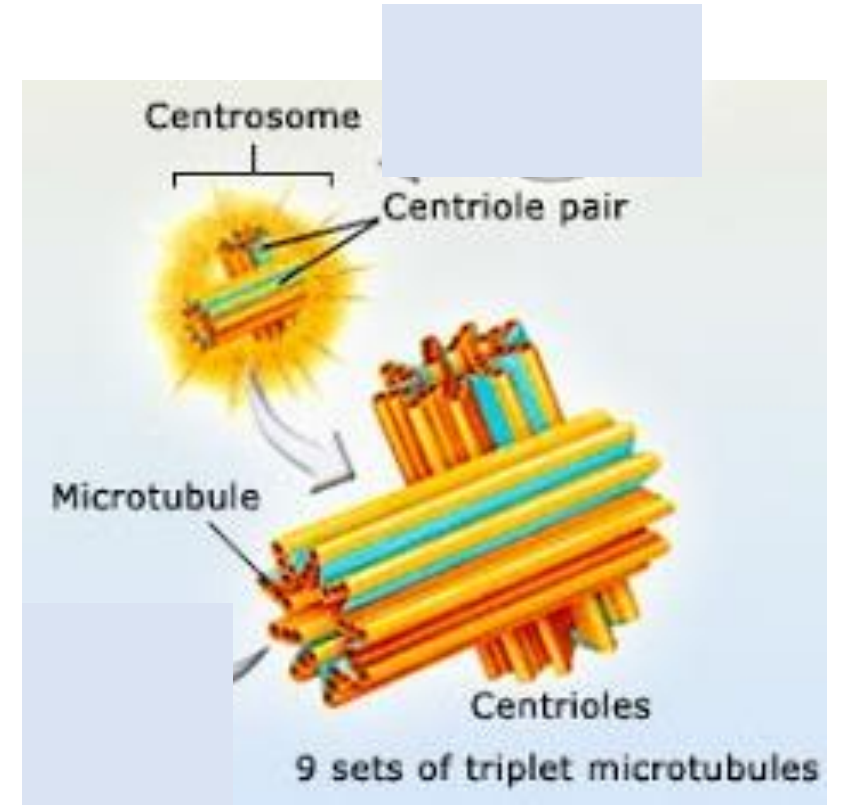
Structure of centrosome

- The centrosome generally lies next to the nucleus, near the center of animal cell
 - In interphase, it is typically located to one side of the nucleus, close to the outer surface of the nuclear envelope
- Contains centriole pair and pericentriolar matrix

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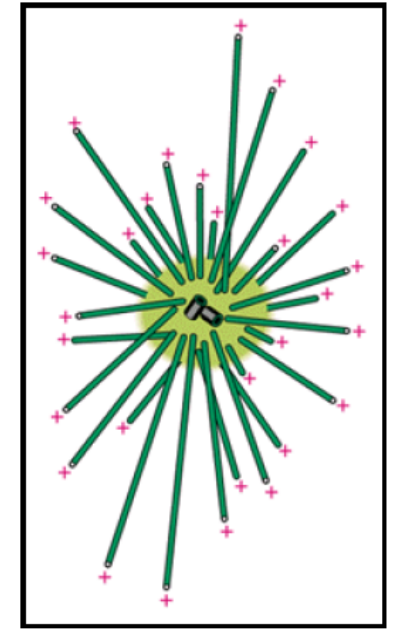


SRV



Centrosomes are the primary site of nucleation of MTs in animal cells

- Centrosome is the major microtubule-organizing center (MTOC) in animal cells
- During interphase the centrosome matrix nucleates a cytoplasmic array of MTs, which project outward toward the cell perimeter with their minus ends attached to the centrosome
- **Starlike network (aster) of MTs emanates from the centrosome** and then elongate toward the cell periphery until the original MT distribution is reestablished
- At any one time, several hundred MTs are growing outward from a centrosome
- Cytoplasmic array of MTs emanating from the centrosome can act as a **surveying device that is able to find the center of the cell**
- Centrosomes **protect the minus ends of MTs** and continually nucleate the formation of new MTs, which grow out in random directions



Starlike network of MTs emanating from centrosome

Centriole disengagement



Duplication and elongation



Maturation and separation

