

## **1 | the problem**

**1.1 | rapidly dividing cancer cells are resource intensive tissues**

**1.2 | they evolved to induce blood vessels within them**

## **2 | complexities**

**2.1 | increased vessel volume means you need to balance with creation of new blood cells**

## **3 | why not all cancers**

**3.1 | if some cancers reproduce slowly enough, then their cells may be able to get enough nutrients through diffusion**

**3.2 | angiogenic switch**

**3.2.1 | when a tumor gets big/hungry enough to need blood**

## **4 | how it happens**

**4.1 | cells in the center of a mass start to starve of nutrients and oxygen**

**4.2 | creates a region of hypoxia (lack of oxygen)**

**4.3 | surrounding cells begin recruiting blood vessels**

**4.4 | if the blood vessel is close enough, then the tumor may keep spreading**

**4.5 | if the blood vessel is too far or too slow, then the cells may start dying and the cancer may go away**