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Catecholamines and Wool Growth

Produced for the CRC for Premium Quality Wool undergraduate program by;
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Catecholamines

– Adrenaline

- released from adrenal medulla

– Noradrenaline

- released from the ends of nerves

• Control fight or flight response

- short term
- increase energy supply
- increase breakdown of glycogen to release glucose
- increase lactate release from muscles
- vasoconstriction

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Effect of catecholamines on cell division in the follicle

No. of bulb cells undergoing mitosis 2 h after colchicine

<i>Treatment</i>	<i>CDR</i>
<i>Control</i>	4.72 ± 2.48
<i>Noradrenaline (50µg)</i>	2.04 ± 1.66*
<i>Noradrenaline (100µg)</i>	3.26 ± 2.08*
<i>Adrenaline (50µg)</i>	4.42 ± 2.47
<i>Adrenaline (100µg)</i>	2.95 ± 1.77*

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Action of Catecholamines in the Skin

- **Adrenergic receptors present in dermal papilla**
 - is this a possible stimulation of an inhibitory factor?

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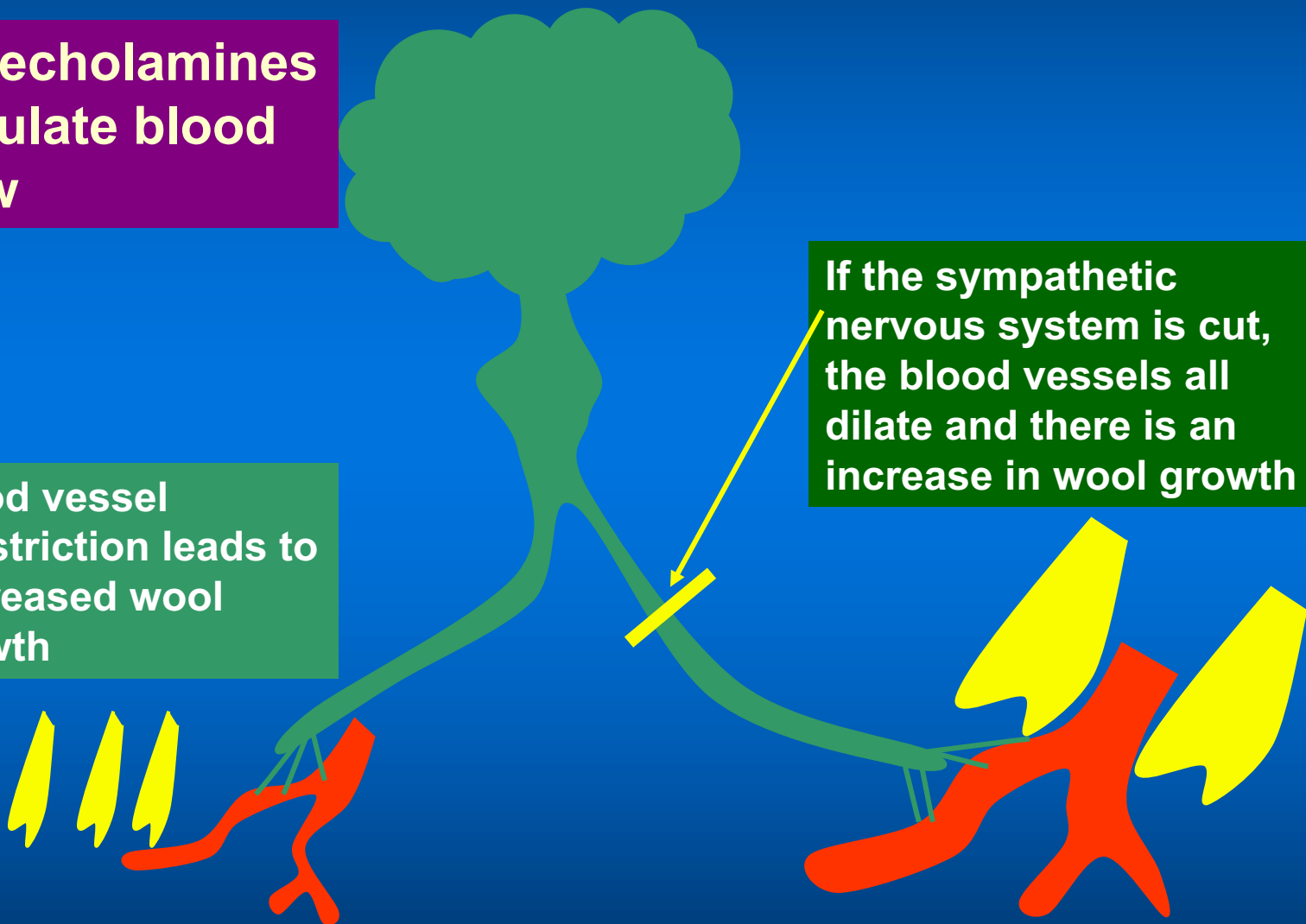
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Indirect effect of noradrenaline on wool growth

Catecholamines regulate blood flow

Blood vessel constriction leads to decreased wool growth

If the sympathetic nervous system is cut, the blood vessels all dilate and there is an increase in wool growth



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