Follicle Initiation and Development

Produced for the CRC for Premium Quality Wool undergraduate program by;
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Primary follicle initiation

Source: Hardy and Lyne (1956)
Secondary follicle initiation

Source: Hardy and Lyne (1956)
Follicle development in Merinos from 62 until 83 days of gestation

Epidermal downgrowth
Dermal fibroblast cluster

62 days
Less developed follicles
83 days
Dermal fibroblast cluster

70 days
Suint gland

Advanced follicle
Fibre canal
ORS
IRS

Janelle Hocking Edwards
Follicle development in Merinos from 105 until 132 days of gestation

- Immature S
- Original
- Branched
- Dermal fibroblast cluster
- Mature P

105 days

132 days
## Fetal age and follicle development

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<th>Foetal age in days</th>
<th>70</th>
<th>80</th>
<th>90</th>
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<th>120</th>
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### Primary phase
- Central P fibres forming
- Central P fibres through skin
- Lateral P sebaceous glands
- Central P fibres
- S sebaceous glands
- S follicles
- Central P sebaceous glands
- Suint glands
- Lateral P follicles
- Central P follicles
Primary and secondary follicle densities change with time

• Primary follicle density reaches a maximum at about 85 days of gestation

• Secondary follicle density reaches a peak at about 125 days of gestation

• Follicle densities reach a peak and then decline due to skin expansion

Transverse section of skin at 135 days of gestation and at birth

135 days of gestation: S:P = 19

Birth: S:P = 14
Secondary follicles regress after 135 days of gestation until birth

- S:P peaks at 135 days of gestation
- S:P declines during the final fortnight of gestation
- No effect of age on S:P after birth

Implications of secondary follicle regression in the fetal Merino

- Approximately 20% of secondary follicles that are initiated in the fetus regress prior to birth
  - This represents a lost resource that could ultimately lead to a decrease in income to the farmer from depressed wool production and quality

- Net secondary follicle initiation is complete at least 15 days prior to birth
  - This has implications on manipulation of the follicle population