



## Age

### CV – Chinspot

1. Chinspot no longer visible.
2. Chinspot only visible on part of the chin. Pattern of depigmentation can be variable.
3. Chinspot still clearly visible on white chin, but faded. Pattern of depigmentation can be variable.
4. Dark spot on the chin, lighter than the nose. Sometimes faint along the edges.
5. Dark purple chinspot, similar to the colour of the nose.

### Epi- Epiphyseal growth plates

1. Epiphyseal gaps not yet sealed. Three translucent regions can be seen in the joint: the space between the bones, and the two epiphyseal plates on either side. Joint is still long and thin.
3. Intermediate joining visible.
5. Epiphyseal gap closed and no longer translucent. Only the gap between the two bones is still translucent. Joints thicker and rounded.

### Age – Estimation of age

- Juv.- Juvenile (2-3 months).
- Sub.-Subadult, sexual immature (between 3 and 15 months).
- Ad.- Adult, sexual mature (between 3 months and unknown number of years).
- Ab. Avr.-Above average (clearly older than other individuals of same species. The exact age of such an individual will depend on specie specific trades as well on geographical related variables).

## Dentition

### Wear – Dental wear

1. No wear, canines still pointed.
2. No wear on molars, only slight wear on premolars and canines.
3. All teeth including molars slightly worn (also already visible from the front).
4. Chewing surfaces of molars clearly worn, canines flattened.
5. Chewing surfaces severely worn (almost flat), canines maximally half their original size.

### Plaque – Dental plaque

1. No plaque, or only maximally on one molar.
2. Yellow plaque in crevices of and between (pre-)molars, black discolouration on maximally one tooth.
3. Yellow or black plaque present in the crevices and edges of most teeth, but plaque does not continue uninterrupted along the edges of more than two teeth.
4. Narrow black or (partially) yellow line of plaque along the entire tooth row.
5. Broad black band of plaque along the entire tooth row.

## Secondary sexual characteristic

### BC – Buccal glands

Buccal glands: Glands along the chewing muscle of *Pipistrellus*, *Eptesicus*, *Nyctalus*, *Vespertilio* en *Hypsugo* that swell and turn yellow during the breeding season.

1. No buccal glands visible.
2. Slightly visible.
3. Visible, light yellow.
4. Obvious.
5. Very obvious (extruding and yellow). A dimple is visible in the middle of the gland, making it appear donut-shaped.

## Males

### Ts- Testes

The testes progressively expand and descend towards the tail. In *Rhinolophus* and *Nyctalus*, testes expand but do not descend. The size of the testes varies from 1 to 5. At category 5 the testes is very large and swollen.

### Epi. Size – Size of the epididymes.

The epididymes descend from the body cavity along the uropatagium; in *Myotis* extending along (almost) the entire first vertebra of the tail. Upon reaching sexual maturity for the first time, the epididymes do not reascend and remain temporarily elongated. After the mating season the epididymes appear empty. The size and shape of the epididymes varies largely between species. *Pipistrelles* have very round epididymes that descend to a much lesser degree than those of the *Myotis* species. The size of the epididymes varies from 1 to 5. At category 1 the epididymides are still in the body cavity. At category 5 the epididymides is completely descended and long.

### Epi. Filling – Filling of the epididymes

The degree of filling of the epididymes is measured in 5 percentage classes. Often a dark tip is visible in the epididymes when an individual has been previously sexually active, in this case the epididymes size is scored a class higher than the epididymes filling.

- 1 - Completely empty, 0%.
- 2 - Barely filled, 25%.
- 3 - Moderately filled, 50%.
- 4 - Almost completely filled 75%, epididymes begin to swell.
- 5 - Completely filled (100%) Epididymes clearly swollen.

### Epi. Colour – Colour of the caudae epididymes

The pigmentation of the (tunica vaginalis in front of the) caudae epididymes diffuses as they expand. Animals that were previously sexually active therefore have lighter epididymes than juveniles or subadults. There is a large amount of variation between species. For example, Geoffrey's bat also has very dark epididymes in adults, whereas those of *Pipistrellus* can be very light, also in juveniles. Often the tip of the epididymes remains dark in adult bats, the colour of this tip should not be taken into account when scoring.

- *Pipistrellus*: juvenile: light brown; adult: light brown.
- Dark-furred *myotis*: juvenile: very dark; adult: dark.
- Light-furred *myotis*: juvenile: (dark) brown; adult: creamy.
- *Vespertilio*: juvenile: dark brown; adult: (dark).
- *Nyctalus*: juvenile: (dark) brown; adult: creamy.
- *Eptesicus*: juvenile: (dark) brown; adult: creamy.

- Plecotus: juvenile: (dark) brown; adult: creamy.

## R. Status ♂ - Reproductive status males

SI - Sexual immature. Juvenile male which shows no signs of sexual activity. Testes not swollen, epididymes still in body cavity. The caudae epididymes heavily pigmented.

SA1 – Sexual status 1. The early stage of spermatogenesis. Testes swollen, but epididymes not descended and without filling.

SA2 - Sexual status 2. The beginning the testes regression and the descending and swelling of the epididymes.

SA3 – Sexual status 3. The last stage of spermatogenesis activity. The epididymes are fully swollen and the testes is regressed.

SM – Sexual mature. After the mating season. Male without enlarged testes or filled epididymes, but with clearly descended epididymes and diffuse pigmentation of the caudae epididymes.

## Females

MG - Mammary glands. Mammary glands are visible under the skin surrounding the nipple as a light-yellow or white discolouration. The size of the mammary glands, when measured along the anteroposterior axis, varies from 1 cm to 2,5 cm. Possible swelling of the mammary glands should be noted in the remarks field.

1. Mammary glands not visible, skin around the nipple the same colour as that on the stomach
2. Mammary glands visible, maximal diameter approximately 1 cm.
3. Mammary glands visible, maximal diameter approximately 1.5 cm.
4. Mammary glands visible, maximal diameter approximately 2 cm.
5. Mammary glands visible, maximal diameter approximately 2.5 cm.

R. status ♀- Reproductive status female. This category can be assessed by investigating the following characteristics: the nipple, hair in nipple area and the the area immediately surrounding the nipple. The nipple area always remains completely bald. Some hair remains on the nipple itself, and during the lactation period this sticks together in a tuft. When assessing baldness, the amount of hair in the immediate area surrounding the nipple is scored. During the lactation period the nipple clearly discolours due to callous formation, this discolouration can be whitish, yellowish, or dark brown.

- S.I – Sexual immature. Female that is not pregnant. Nipple not enlarged, colour same as surrounding skin. No bald patch around the nipple, and the surrounding hairs have (almost) the same length, colour, and structure as the surrounding hair.
- Preg. – Pregnant. Abdomen swollen and hard. Stomach slightly pear-shaped.
- H.Preg. - Highly pregnant, abdomen clearly swollen and hard. Stomach clearly pear-shaped, release immediately.
- Lac – Lactating. (Strongly) enlarged nipple as a result of current lactation period. Clearly visible mammary glands. Colour of the nipple clearly different from that of the surrounding skin. Bald patch around the nipple, hairs on the nipple sometimes stuck together in a single tuft.
- P.lact – Post lactating. Female that has lactated previously in the season. Strongly enlarged nipple. Immediately after the lactation period the hair starts to regrow, these hairs are short, grey and clearly different in structure from the surrounding hairs.
- 3 - Female which has clearly lactated in at least one previous year, but is not currently pregnant nor lactating. Enlarged (wart-like) nipple due to lactation in the past. Colour clearly different from that of the surrounding skin, hairs in the immediate area of the nipple are still slightly different in colour and structure from surrounding hairs, but not grey. Hair density is also lower.
- 5 - Female which has clearly lactated in several previous years, but is not currently pregnant nor lactating. Strongly enlarged, wart-like nipple due to multiple years of lactation. Colour clearly different from that of the surrounding skin, hairs in the immediate area of the nipple are still slightly different in colour and structure from surrounding hairs, but not grey. Hair density is also lower.

## Parasites

Parasites: record the presence and estimate the number of the following groups of parasites: Large wing mites (Spinturnicids), smaller wing mites (Macronyssids), “ear” mites (Trombiculids), ticks, bat flies and other. We suggest using the following abbreviations, when possible with the number of parasites found. (eg. F3 for 3 bat flies and M100-120 for an estimation of between 100-120 Macronyssid mytes).