

# MicroCT E14.5-E15.5 IMPC\_EMO\_002

## Purpose

To assess morphological defects in E14.5-E15.5 embryos from lethal strains with MicroCT.

## Experimental Design

- Set up timed matings with heterozygous mice
- Day 0 is defined as the midpoint of the prior dark cycle following the identification of a copulation plug.
- Collect embryos at E14.5 or E15.5 with 3 minimum homozygous and 1 littermate control
- Ensure embryos are bleed as much as possible.
- Reconstruct the scans according to manufacturer's instructions.

## Procedure

1. **Set up timed mating with heterozygous animals. Dissect and collect  $\geq 3$  homozygote embryos.**
2. **Process the embryos using the centre's staining and embedding protocol . Centre-specific methods are recorded within a document**
3. **Scan and generate reconstructions of embryos.**

## Notes

Embryos may be processed for Histopathology.

## Parameters and Metadata

### Embryo reconstruction IMPC\_EMO\_001\_001 | v1.2

seriesMediaParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Increments: Minimum 1

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**Experimenter ID** IMPC\_EMO\_002\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

**Equipment ID** IMPC\_EMO\_003\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

**Equipment Manufacturer** IMPC\_EMO\_004\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

**Equipment Model** IMPC\_EMO\_005\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

**Equipment Version** IMPC\_EMO\_006\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Image Pixel Size IMPC\_EMO\_007\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured:  $\mu\text{m}$

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## E14.5-E15.5 MicroCT Preparation protocol IMPC\_EMO\_008\_001 |

v1.0

procedureMetadata

Req. Analysis: true

Req. Upload: true

Is Annotated: false

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## Object to Source IMPC\_EMO\_009\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: mm

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**Camera to Source** IMPC\_EMO\_010\_001 | v1.0

procedureMetadata

Req. Analysis: false      Req. Upload: true      Is Annotated: false

Unit Measured: mm

**Date equipment last calibrated** IMPC\_EMO\_011\_001 | v1.0

procedureMetadata

Req. Analysis: false      Req. Upload: false      Is Annotated: false

**Date of Sacrifice** IMPC\_EMO\_012\_001 | v1.0

procedureMetadata

Req. Analysis: false      Req. Upload: true      Is Annotated: false

**Date Preparation Finished** IMPC\_EMO\_013\_001 | v1.0

procedureMetadata

Req. Analysis: false      Req. Upload: true      Is Annotated: false

**Date of Scan** IMPC\_EMO\_014\_001 | v1.0

procedureMetadata

Req. Analysis: false      Req. Upload: true      Is Annotated: false

**Source Voltage** IMPC\_EMO\_015\_001 | v1.1

procedureMetadata

Req. Analysis: false      Req. Upload: true      Is Annotated: false

Unit Measured: kV

**Source Current** IMPC\_EMO\_016\_001 | v1.0

procedureMetadata

Req. Analysis: false      Req. Upload: true      Is Annotated: false

Unit Measured: uA

**Screenshots** IMPC\_EMO\_017\_002 | v2.1

seriesMediaParameter

Req. Analysis: false      Req. Upload: false      Is Annotated: false

Increments: Minimum 1

---

## 3rd ventricle IMPC\_EMO\_018\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Description: 3rd\_ventricle

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Median sulcus IMPC\_EMO\_019\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: median\_sulcus

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## 4th ventricle IMPC\_EMO\_020\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Description: 4th\_ventricle

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## **Adrenal gland** IMPC\_EMO\_021\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** adrenal\_gland

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## **Aorta** IMPC\_EMO\_022\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** aorta

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## **Arch of aorta** IMPC\_EMO\_023\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** arch\_of\_aorta

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Heart atrium** IMPC\_EMO\_024\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** heart\_atrium

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**basioccipital bone** IMPC\_EMO\_025\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** basioccipital\_bone

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Bladder** IMPC\_EMO\_026\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** bladder

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Bronchus** IMPC\_EMO\_027\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** bronchus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Brown fat** IMPC\_EMO\_028\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** brown\_fat

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Dorsal root ganglia** IMPC\_EMO\_029\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** dorsal\_root\_ganglia

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Carotid artery** IMPC\_EMO\_030\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** carotid\_artery

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Cerbral aqueduct** IMPC\_EMO\_031\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** cerbral\_aqueduct

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Cerebellum** IMPC\_EMO\_032\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** cerebellum

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**4th ventricle choroid plexus** IMPC\_EMO\_033\_001 | v1.0

simpleParameter

**Req. Analysis:** false                      **Req. Upload:** false                      **Is Annotated:** true

**Description:** 4th\_ventricle\_choroid\_plexus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**lateral ventricle choroid plexus** IMPC\_EMO\_034\_001 | v1.0

simpleParameter

**Req. Analysis:** false                      **Req. Upload:** false                      **Is Annotated:** true

**Description:** lateral\_ventricle\_choroid\_plexus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Clavicle** IMPC\_EMO\_035\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** clavicle

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## **Cochlea** IMPC\_EMO\_036\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** cochlea

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## **Cerebral cortex** IMPC\_EMO\_037\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** cerebral\_cortex

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## **Ductus arteriosus** IMPC\_EMO\_038\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** ductus\_arteriosus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Diaphragm IMPC\_EMO\_039\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** diaphragm

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Diencephalon IMPC\_EMO\_040\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** diencephalon

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Limb digit IMPC\_EMO\_041\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** limb\_digit

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## **Dorsal aorta** IMPC\_EMO\_042\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** dorsal\_aorta

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## **Duodenum** IMPC\_EMO\_043\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** duodenum

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## **Ejaculatory duct** IMPC\_EMO\_044\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** ejaculatory\_duct

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Spinal cord cervical region IMPC\_EMO\_045\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** spinal\_cord\_cervical\_region

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Epiglottis IMPC\_EMO\_046\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** epiglottis

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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# Esophagus IMPC\_EMO\_047\_001 | v1.0

simpleParameter

Req. Analysis: false      Req. Upload: true      Is Annotated: true

Description: esophagus

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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# Pharyngo-tympanic tube IMPC\_EMO\_048\_001 | v1.0

simpleParameter

Req. Analysis: false      Req. Upload: false      Is Annotated: true

Description: pharyngo\_tympanic\_tube

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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# Exoccipital bone IMPC\_EMO\_049\_001 | v1.0

simpleParameter

Req. Analysis: false      Req. Upload: false      Is Annotated: true

Description: exoccipital\_bone

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Eyelid IMPC\_EMO\_050\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** eyelid

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Femur IMPC\_EMO\_051\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** femur

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Fibula IMPC\_EMO\_052\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** fibula

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## T1 rib IMPC\_EMO\_053\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** t1\_rib

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Soft palate IMPC\_EMO\_054\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** soft\_palate

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Palate IMPC\_EMO\_055\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** palate

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Gallbladder IMPC\_EMO\_056\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** gallbladder

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Gluteus maximus IMPC\_EMO\_057\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** gluteus\_maximus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Hepatic duct IMPC\_EMO\_058\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** hepatic\_duct

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Midgut IMPC\_EMO\_059\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** midgut

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## herniated abdominal wall IMPC\_EMO\_060\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** herniated\_abdominal\_wall

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Hindbrain IMPC\_EMO\_061\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** hindbrain

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Hindgut IMPC\_EMO\_062\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** hindgut

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Hip IMPC\_EMO\_063\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** hip

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Hippocampus IMPC\_EMO\_064\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** hippocampus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Humerus IMPC\_EMO\_065\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** humerus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Hyaloid cavity IMPC\_EMO\_066\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** hyaloid\_cavity

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Hyoid bone IMPC\_EMO\_067\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** hyoid\_bone

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Hypothalamus IMPC\_EMO\_068\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: hypothalamus

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Inferior vena cava IMPC\_EMO\_069\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: inferior\_vena\_cava

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Pituitary gland IMPC\_EMO\_070\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: pituitary\_gland

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Pigmented retinal epiithelium IMPC\_EMO\_071\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: pigmented\_retinal\_epiithelium

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Innominate artery IMPC\_EMO\_072\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: innominate\_artery

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Interventricular septum IMPC\_EMO\_073\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Description: interventricular\_septum

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Intraretinal space IMPC\_EMO\_074\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** intraretinal\_space

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Vomeronasal organ IMPC\_EMO\_075\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** vomeronasal\_organ

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Jejunum IMPC\_EMO\_076\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** jejunum

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Jugular lymph sac IMPC\_EMO\_077\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: jugular\_lymph\_sac

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Kidney IMPC\_EMO\_078\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Description: kidney

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Kidney pelvis IMPC\_EMO\_079\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: kidney\_pelvix

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Renal cortex** IMPC\_EMO\_080\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** renal\_cortex

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Renal medulla** IMPC\_EMO\_081\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** renal\_medulla

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Larynx** IMPC\_EMO\_082\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** larynx

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Lateral ventricle** IMPC\_EMO\_083\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** lateral\_ventricle

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Lens** IMPC\_EMO\_084\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** lens

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Limb muscle** IMPC\_EMO\_085\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** limb\_muscle

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Liver** IMPC\_EMO\_086\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** liver

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Liver lobe** IMPC\_EMO\_087\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** liver\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Liver caudate lobe** IMPC\_EMO\_088\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** liver\_caudate\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Ductus venosus IMPC\_EMO\_089\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** ductus\_venosus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Liver left lobe IMPC\_EMO\_090\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** liver\_left\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Liver right lobe IMPC\_EMO\_091\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** liver\_right\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Lower jaw molar IMPC\_EMO\_092\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** lower\_jaw\_molar

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Right lung cranial lobe IMPC\_EMO\_093\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** right\_lung\_cranial\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Right lung accessory lobe IMPC\_EMO\_094\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** right\_lung\_accessory\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Right lung caudal lobe IMPC\_EMO\_095\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** right\_lung\_caudal\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Left lung IMPC\_EMO\_096\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** left\_lung

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Right lung middle lobe IMPC\_EMO\_097\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** right\_lung\_middle\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## **Mandible** IMPC\_EMO\_098\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** mandible

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## **Masseter** IMPC\_EMO\_099\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** masseter

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## **Meckel's cartilage** IMPC\_EMO\_100\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** meckel\_s\_cartilage

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Medulla oblongata IMPC\_EMO\_101\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** medulla\_oblongata

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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## Midbrain IMPC\_EMO\_102\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** midbrain

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Midbrain roof plate IMPC\_EMO\_103\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** midbrain\_roof\_plate

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Mitral valve IMPC\_EMO\_104\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** mitral\_valve

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Nasal capsule IMPC\_EMO\_105\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** nasal\_capsule

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Nasal cavity** IMPC\_EMO\_106\_001 | v1.0

simpleParameter

Req. Analysis: false                      Req. Upload: true                      Is Annotated: true

Description: nasal\_cavity

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Nasal septum** IMPC\_EMO\_107\_001 | v1.0

simpleParameter

Req. Analysis: false                      Req. Upload: true                      Is Annotated: true

Description: nasal\_septum

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Nasopharynx** IMPC\_EMO\_108\_001 | v1.0

simpleParameter

Req. Analysis: false                      Req. Upload: false                      Is Annotated: true

Description: nasopharynx

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Neural retina** IMPC\_EMO\_109\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** neural\_retina

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Olfactory epithelium** IMPC\_EMO\_110\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** olfactory\_epithelium

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Olfactory lobe** IMPC\_EMO\_111\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** olfactory\_lobe

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Optic nerve IMPC\_EMO\_112\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** optic\_nerve

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Oropharynx IMPC\_EMO\_113\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** oropharynx

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Oral cavity IMPC\_EMO\_114\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** oral\_cavity

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Ovary IMPC\_EMO\_115\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** ovary

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Palatal shelf IMPC\_EMO\_116\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** palatal\_shelf

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Pancreas IMPC\_EMO\_117\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** pancreas

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Parathyroid gland IMPC\_EMO\_118\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** parathyroid\_gland

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Penis IMPC\_EMO\_119\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** penis

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Pericardial cavity IMPC\_EMO\_120\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** pericardial\_cavity

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Pericardium IMPC\_EMO\_121\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** pericardium

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Peritoneal cavity IMPC\_EMO\_122\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** peritoneal\_cavity

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Pineal primordium IMPC\_EMO\_123\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** pineal\_primordium

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Pinna IMPC\_EMO\_124\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** pinna

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Pons IMPC\_EMO\_125\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** pons

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Portal vein IMPC\_EMO\_126\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** portal\_vein

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Primary palate IMPC\_EMO\_127\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** primary\_palate

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Pulmonary artery IMPC\_EMO\_128\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** pulmonary\_artery

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Quadriceps muscle IMPC\_EMO\_129\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** quadriceps\_muscle

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Radius IMPC\_EMO\_130\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** radius

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Rathke's pouch IMPC\_EMO\_131\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** rathke\_s\_pouch

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Rectum IMPC\_EMO\_132\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** rectum

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Rib IMPC\_EMO\_133\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Description: rib

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## S1 vertebral cartilage condensation IMPC\_EMO\_134\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: s1\_vertebral\_cartilage\_condensation

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Scapula IMPC\_EMO\_135\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: scapula

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Semicircular canal IMPC\_EMO\_136\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: semicircular\_canal

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Small intestine IMPC\_EMO\_137\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: small\_intestine

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Sphenoid bone IMPC\_EMO\_138\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: sphenoid\_bone

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Spinal cord** IMPC\_EMO\_139\_001 | v1.0  
simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** spinal\_cord

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Spinal cord central canal** IMPC\_EMO\_140\_001 | v1.0  
simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** spinal\_cord\_central\_canal

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Spleen primordium** IMPC\_EMO\_141\_001 | v1.0  
simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** spleen\_primordium

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Sternum** IMPC\_EMO\_142\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** sternum

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Stomach** IMPC\_EMO\_143\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** true      **Is Annotated:** true

**Description:** stomach

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

**Stomach lumen** IMPC\_EMO\_144\_001 | v1.0

simpleParameter

**Req. Analysis:** false      **Req. Upload:** false      **Is Annotated:** true

**Description:** stomach\_lumen

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## **Stomach wall** IMPC\_EMO\_145\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** stomach\_wall

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## **Stomach fundus** IMPC\_EMO\_146\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** stomach\_fundus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## **Stomach pyloric region** IMPC\_EMO\_147\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** stomach\_pyloric\_region

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Subclavian artery IMPC\_EMO\_148\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** subclavian\_artery

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Submandibular gland IMPC\_EMO\_149\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** submandibular\_gland

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Tail IMPC\_EMO\_150\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** tail

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Nucleus pulposus IMPC\_EMO\_151\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** nucleus\_pulposus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Temporal bone IMPC\_EMO\_152\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** temporal\_bone

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Testis IMPC\_EMO\_153\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** testis

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Thalamus IMPC\_EMO\_154\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** thalamus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Descending aorta IMPC\_EMO\_155\_001 | v1.2

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** descending\_thoracic\_aorta

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Thymus IMPC\_EMO\_156\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** thymus

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Thyroid gland IMPC\_EMO\_157\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** thyroid\_gland

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Tibia IMPC\_EMO\_158\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** tibia

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Tongue IMPC\_EMO\_159\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** tongue

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Trachea IMPC\_EMO\_160\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** trachea

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Tricuspid valve IMPC\_EMO\_161\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** tricuspid\_valve

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Trigeminal V ganglion IMPC\_EMO\_162\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** trigeminal\_v\_ganglion

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Ulna IMPC\_EMO\_163\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** ulna

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Upper jaw incisor IMPC\_EMO\_164\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** upper\_jaw\_incisor

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Upper jaw molar IMPC\_EMO\_165\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** upper\_jaw\_molar

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Urethra IMPC\_EMO\_166\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** urethra

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Vagal trunk IMPC\_EMO\_167\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** vagal\_trunk

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Vena cava IMPC\_EMO\_168\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** vena\_cava

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Heart ventricle IMPC\_EMO\_169\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** heart\_ventricle

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Vertebra IMPC\_EMO\_170\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** vertebra

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Vibrissa IMPC\_EMO\_171\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** vibrissa

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Oedema IMPC\_EMO\_172\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** oedema

**Options:** yes, no, unobservable,

---

## physiological umbilical hernia morphology IMPC\_EMO\_173\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** physiological\_umbilical\_hernia\_morphology

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

---

## Cervical flexure morphology IMPC\_EMO\_174\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** cervical\_flexure\_morphology

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Size IMPC\_EMO\_175\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** size

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Spine curvature IMPC\_EMO\_176\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** spine\_curvature

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Craniofacial morphology IMPC\_EMO\_177\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: craniofacial\_morphology

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

---

## Annotator ID IMPC\_EMO\_178\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Description: annotator\_id

---

## Date of Annotation IMPC\_EMO\_179\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Description: date\_of\_annotation

---