Brain Knife

🧬 Description

The **Brain Knife** is a **neurosurgical dissection instrument** designed to cut soft brain tissue during postmortem examination or surgical procedures. It typically features a **long, thin, flat, stainless steel blade** for precise slicing, and is used in autopsy suites, pathology labs, and occasionally in brain surgery for tissue resection.

🔧 Specifications

Feature	Description
Instrument Name	Brain Knife / Brain Dissection Knife
Blade Type	Straight, smooth-edged
Blade Length	10" – 14" (250 – 360 mm)
Blade Width	Approx. 1–1.5 cm
Handle	Integral or attached (plastic or metal)
Edge Type	Non-serrated, razor-sharp
Weight	Lightweight (60–150 grams approx.)
Construction	One-piece or jointed (blade + handle)

📏 Available Sizes & Shapes

Size	Blade Length	Total Length	Common Use
Standard	10" – 12"	~14"	General postmortem use
Long Blade	13" – 14"	~16"	Deep tissue slicing

🔷 Shape: Flat, elongated rectangular blade with blunt or rounded tip.

🧪 Material

- **Blade**: Surgical-grade **stainless steel** (corrosion-resistant)
- **Handle**:
    - Stainless steel (one-piece)
    - High-grade plastic (ergonomic, non-slip grip)
    - Wood (rare, traditional use)

📂 Category & Product Form

- **Category**: Surgical / Postmortem Instruments → Cutting Instruments
- **Form**: Manual handheld precision cutting tool
- **Subcategory**: Autopsy Knife / Pathology Knife
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💡 Usage/Application

Used In:

- Postmortem/autopsy labs
- Neuropathology
- Forensic medicine
- Surgical histopathology (tissue sectioning)

Applications:

- Slicing brain hemispheres for examination
- Creating even cross-sections of cerebrum, cerebellum
- Sampling brain tissues for pathology
- Precise dissection in academic labs

✅ Advantages

- ✔ Long blade allows **full cross-section cuts** of brain tissue
- ✔ Sharp edge delivers **clean, smooth slices** for microscopic study
- ✔ Stainless steel is **non-corrosive** and easy to sterilize
- ✔ Ergonomic grip (in plastic/metal handle models) improves control
- ✔ Lightweight for **repetitive precision slicing**

❌ Disadvantages

- ❗ Not suitable for hard tissue (skull, bone)
- ❗ Requires regular sharpening or replacement
- ❗ Improper handling can cause **accidental lacerations**
- ❗ Limited to soft tissue – not multipurpose
- ❗ Manual force needed; not automated

⚠️ Precautions

- Always wear cut-resistant gloves while handling
- Sterilize before and after each use
- Store in sheath or instrument tray to avoid injuries
- Use only for brain or soft tissue; avoid contact with bone
- Check for any nicks or dullness in blade before use

Sterilization & Handling

Material Type	Sterilization Method
Stainless Steel	Autoclave (121°C, 15–20 min) or chemical soak
Plastic Handle Type	Autoclave-compatible or cold sterilization
After Use	Wash with enzymatic cleaner; dry thoroughly
Storage	Keep in dry tray or blade guard case

Human Applications

Field	Application Example
Human Pathology	Brain cross-sectioning in autopsies
Forensic Medicine	Neurological forensics; brain trauma assessment

Veterinary Applications

Veterinary Pathology	Animal necropsy and tissue examination
Academic Research	Lab dissections for educational purposes

HSN / HS Code

Region	HS/HSN Code	Description
India	9018.90	Surgical instruments, others
International	9018	Medical or veterinary instruments

❓ Frequently Asked Questions(FAQs)

Q1. What is the difference between a brain knife and a regular scalpel?

🔷 Brain knives have **longer, broader blades** designed for **smooth slicing of brain tissue**, whereas scalpels are for short, sharp incisions.

Q2. Can brain knives be sterilized in an autoclave?

🔷 Yes, stainless steel brain knives are **fully autoclavable**.

Q3. Are disposable brain knives available?

🔷 Most are **reusable**, but some manufacturers may offer **disposable variants** (plastic/steel hybrid).

Q4. Is it used only in postmortem exams?

🔷 Primarily, but also used in **neurological research**, **forensics**, and **educational dissections**.

Q5. What is the ideal length for standard use?

🔷 Around **10"–12" blade** with a total length of **14"–16"** is common in pathology.