18F-FDG PET/CT indications:

a) Infection imaging:
   • Vasculitis
     ○ Raised ESR and CRP
   • FUO (Localization/Detection)
   • Monitoring Treatment Response
   • Spinal infection (discitis, peri-prosthetic)

b) Neuroimaging:
   • Dementia
   • Epilepsy

c) Cardiology:
   • Cardiac viability

d) Oncology:

CUP (cancer of unknown primary in an adult or child patient):
Must have (1 or more of the following):
   • histological proof from lymph node biopsy or
   • anatomical imaging that is suspicious of a malignant process or
   • Raised/rising tumour markers

1) Paediatric oncology:
   • Lymphoma (Hodgkin’s and Non-Hodgkin’s):
- Initial staging
- Response to therapy
- Restaging (assessment of residual mass)

- Sarcoma (osteosarcoma, Ewing’s and soft tissue esp Rhabdomyosarcoma):
  - Initial staging
  - Response to therapy
  - Restaging
  - Detection of relapse

- Neuroblastoma (only if MIBG negative)

- CNS tumours:
  - Grading (high or low)
  - Prognostic stratification
  - Response to therapy
  - Detection of recurrence

**Less commonly requested:**
Must be discussed
- Germ cell tumours
- Hepatoblastoma
- Wilm’s tumour
- CUP
- Neurofibromatosis Type 1 → to assess for malignant transformation of neurofibromas

2) **Adults**
• **Lymphoma (Hodgkin’s and Non-Hodgkin’s):**
  - Initial staging
  - Restaging
  - Recurrence/relapse
  - Response to therapy

• **Melanoma:**
  - Initial staging (m) NB! Sentinel lymph node biopsy is imperative for local n staging
  - Restaging
  - Recurrence
  - Response

• **Head and neck:**
  a) **CNS:**
  - Grading
  - Recurrence
  - Restaging
  - Differentiating radiation necrosis from residual tumour
  - Differentiating CNS lymphoma from Toxoplasmosis (If Thallium is unavailable)

  b) **Other tumours:**
  - Initial staging (n and m)
  - Restaging
  - Response to therapy
  - Detect recurrence
c) *Thyroid cancer* (only if rising thyroglobulin and negative $^{123/131}$I WBS)

- **Thorax:**
  
  a) *SPN* $\rightarrow$ *characterization for biopsy*

b) *Lung cancer* (*NSMC, SC)*:
   - Initial staging (n & m)
   - Response to therapy
   - Recurrence
   - Restaging

- **Breast cancer:**
  
  - NB! Sentinel node mapping is imperative for local n staging in early breast cancer
  - Initial staging of locally advanced cancer
  - Recurrence
  - Restaging
  - Response to therapy

- **Abdomen:**

  a) *Oesophagus*:
   - Initial staging (m)
   - Restaging
   - Response to therapy
   - Recurrence

  b) *Colorectal*:
   - Initial staging (n and m)
   - Restaging
• Recurrence
• Response to therapy

c) *Stomach (GIST)*:
Must be discussed
• Assessing response to therapy (will need baseline scan)

d) *Gallbladder cancer and cholangiocarcinoma*
   Must be discussed
• Localization
• Initial staging (m)

e) *Pancreatic cancer*
   Must be discussed
• Staging (m only) if blood glucose is normal, CRP and WCC are also normal
• Response
• Recurrence

• *Pelvis:*
  a) *Cervical cancer:*
  • Initial staging (m)
  • Restaging
  • Response to treatment
  • Recurrence
  • Radiation planning

b) *Testicular (non-seminomatous and seminoma)*
   Must be discussed
   • Initial staging
- Restaging
- Recurrence/residual tumour
- Response to therapy

c) **Renal cancer:**
   Must be discussed
   - Initial staging (n and m)
   - Recurrence
   - Restaging

d) **Bladder cancer:**
   Must be discussed
   - Staging (m and n)
   - Residual mass

e) **Ovarian cancer:**
   - Staging (m and n)
   - Recurrence
   - Restaging

f) **Uterine cancer:**
   - Recurrence
   - Restaging

g) **Vulval cancer:**
   - NB! Sentinel node mapping is imperative
   - M staging
   - Restaging

h) **Penile cancer**
Must be discussed

- Initial staging
- Restaging

- **Musculoskeletal** *(includes osteosarcoma, soft tissue sarcoma)*:
  - Staging
  - Grading
  - Recurrence

NB! This list is going to be progressively updated as newer international evidence is published. This will include newer and more established roles for $^{18}$F-FDG PET/CT in oncology, infection/inflammation and neuroimaging.