

# Histological tumour type<sup>1-7</sup> (Required)

## Reason/Evidentiary Support

The most recent World Health Organisation (WHO) book (2016)<sup>8</sup> classifies and codes malignant squamous epithelial tumours of the penis as follows:

## WHO classification of tumours of the penis<sup>a8</sup>

Descriptor	ICD-O codes
<b>Malignant epithelial tumours</b>	
<i>Squamous cell carcinoma, NOS</i>	8070/3
<i>Verrucous carcinoma</i>	8051/3
<i>Adenosquamous carcinoma</i>	8560/3
<i>Sarcomatoid squamous carcinoma</i>	8074/3
<i>Mixed squamous cell carcinoma</i>	8070/3
<i>Basaloid squamous carcinoma</i>	8083/3
<i>Warty (condylomatous) carcinoma</i>	8054/3
<i>Papillary carcinoma (NOS)</i>	8050/3
<i>Lymphoepithelioma-like carcinoma</i>	8082/2
<b>Precursor lesions</b>	
<i>Penile intraepithelial neoplasia</i>	
Low grade	8077/0
High grade	8077/2
<i>Warty PeIN/Basaloid PeIN/Wart-basaloid PeIN</i>	
PeIN differentiated	8071/2
Paget disease	8542/3

a The morphology codes are from the International Classification of Diseases for Oncology (ICD-O). Behaviour is coded /0 for benign tumours; /1 for unspecified, borderline, or uncertain behaviour; /2 for carcinoma in situ and grade III intraepithelial neoplasia; and /3 for malignant tumours.

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The tumours are further subclassified in the recent WHO publication into non- HPV related and HPV related tumours, however there is some group crossover particularly in Usual type squamous cell carcinomas a proportion of which are HPV positive. Mixed carcinomas may also show heterogeneity and sometimes include both HPV and non HPV associated tumour types.

## **A. Non–HPV-related penile squamous cell carcinomas (SCCs)**

### **1. SCC**

Usual carcinoma

Pseudohyperplastic carcinoma

Pseudoglandular carcinoma

### **2. Verrucous carcinoma**

Pure verrucous carcinoma

Carcinoma cuniculatum

### **3. Papillary carcinoma, NOS**

### **4. Adenosquamous carcinoma**

### **5. Sarcomatoid squamous carcinoma**

### **6. Mixed carcinoma**

## **B. HPV-related penile SCCs**

### **7. Basaloid carcinoma**

Papillary–basaloid carcinoma

### **8. Warty carcinoma**

Warty–basaloid carcinoma

Clear cell carcinoma

### **9. Lymphoepithelioma-like carcinoma**

## **C. Other rare carcinomas**

Different subtypes of penile carcinomas have been defined, which appear to be associated with different outcomes and may also therefore justify the adoption of different treatment strategies.

Over 95% of penile cancers are squamous cell carcinomas, with rare instances of sarcomas, melanomas or neuroendocrine carcinomas (including large cell and small cell neuroendocrine carcinomas). In addition to the most common, usual type of squamous carcinoma, subtypes include papillary, basaloid, warty (condylomatous), verrucous and sarcomatoid subtypes.

Subtyping is required as verruciform carcinomas (papillary, warty or verrucous carcinomas) have better outcomes. Basaloid, pseudoglandular/acantholytic and sarcomatoid carcinomas are always high-grade with a worse prognosis than the usual type of squamous carcinoma and may more readily metastasise via the blood stream to distant sites such as the lung. Mixed patterns are frequently present and in these cases all subtypes identified should be recorded.

Different patterns of growth can also be distinguished. Vertical growth/endophytic carcinomas are associated with a higher risk of metastases than superficial spreading/exophytic carcinomas although it is not clear whether this distinction offers superior prognostic power over tumour stage.

p16 staining or assessment of HPV subtypes may also be of help in subtyping squamous tumours but are not mandatory.

## Tumour subtypes of squamous cell carcinoma

- Squamous cell carcinoma of usual subtype (NOS).<sup>9,10</sup>
- Basaloid squamous cell carcinoma.<sup>11</sup>
- Warty (condylomatous) squamous cell carcinoma.<sup>12,13</sup>
- Verrucous squamous cell carcinoma.<sup>6</sup>
- Papillary squamous cell carcinoma.<sup>14</sup>

- Mixed squamous cell carcinomas (specify subtypes).<sup>6</sup>

### Other rare tumour subtypes

#### Squamous cell carcinoma variants

- Pseudohyperplastic squamous cell carcinoma.<sup>6,15,16</sup>
- Verrucous carcinoma variant
  - Carcinoma cuniculatum.<sup>15,17</sup>
- Sarcomatoid (Spindle cell) squamous cell carcinoma.<sup>18</sup>
- Pseudoglandular (Acantholytic adenoid) squamous cell carcinoma.<sup>15,19</sup>
- Lymphoepithelioma like squamous cell carcinoma.<sup>20</sup>
- Warty carcinoma variants
  - Clear cell carcinoma.<sup>15</sup>
  - Warty basaloid squamous cell carcinoma.<sup>21</sup>
- Adenosquamous carcinoma.<sup>22</sup>

#### Non squamous tumours

- High grade neuroendocrine carcinomas including large cell neuroendocrine carcinoma and small cell carcinoma.<sup>15,23,24</sup>
- Malignant melanoma.<sup>25</sup>
- Mesenchymal tumours.<sup>10</sup>
- Urothelial carcinoma of urethra.<sup>10</sup>
- Extramammary Paget's disease.<sup>10</sup>
- Appendage tumours.<sup>10</sup>
- Metastatic tumours.<sup>8</sup>
- Lymphomas and haematological tumours.<sup>10</sup>

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