**Codebook of categorical data**

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| --- | --- | --- | --- | --- |
| **Categorical data** | 0 | 1 | 2 | 3 |
| **sex** | Female | Male |  |  |
| **age level, year** | <55 | ≥55 |  |  |
| **tumor size, mm** | ≤10 | >10 |  |  |
| **thyroid function level** |  | Normal | Hypothyroidism | Hyperthyroidism |
| **TPOAb level** |  | Low  (≤82.30 IU/ml) | High  (>82.30 IU/ml) |  |
| **TGAb level** |  | Low  (≤212.25 IU/ml) | High  (>212.25 IU/ml) |  |
| **extrathyroidal extension** | No | Yes |  |  |
| **multifocality** | No | Yes |  |  |
| **composition** | Mixed cystic and solid | Solid or almost solid |  |  |
| **echogenicity** | Hyperechoic or isoechoic | Hypoechoic or very hypoechoic |  |  |
| **margin** | Non-extrathyroidal extension | Extrathyroidal extension |  |  |
| **echogenic foci** | Non-punctate echogenic foci | Punctate echogenic foci |  |  |
| **blood** | 0 | 1 | 2 | 3 |
| **shape** | Wider-than-tall | Taller-than-wide |  |  |
| **PMTC** | No | Yes |  |  |
| **US\_CLNM** | Negative | Positive |  |  |
| **US\_LLNM** | Negative | Positive |  |  |
| **LNM** | Negative | Positive |  |  |
| **CLNM** | Negative | Positive |  |  |
| **LLNM** | Negative | Positive |  |  |