

Annotation Guide - GGPONC 2.0

The definition of entity classes follows the [concept hierarchy](#) in SNOMED CT.

In general, when the definition of a concept is unclear, we advise you to check the [SNOMED CT Browser](#).

General Rules

	Rule	Remarks	Examples
0.1	Compound nouns should be annotated as a single entity	<ul style="list-style-type: none">• Tokens connected by hyphens usually belong to the same entity• Missing hyphens due to orthographical errors should be considered as being present (“HPV Infektion”)	<ul style="list-style-type: none">• [Vitamin D][Substance]• [LSIL-Patientinnen][Finding]• [Röntgen-Thorax][Procedure]• [HPV Infektion][Finding]• [Hodgkin Lymphom][Finding]• [5-Jahres PFS][Finding]
0.2	Annotation spans should be as short as possible	<ul style="list-style-type: none">• Modifiers (mostly adjectives or adverbs) should be annotated separately using the <i>Specification</i> class (also see below)• the same applies to disease subtypes and dosage information	<ul style="list-style-type: none">• <essentielle>[Spec →] [Spurenelemente][Substance]• <supportive>[Spec →] [Therapie][Procedure]• [NSCLC][Finding] <IV>[Spec ←]• [SCLC][Finding] <extensive disease>[Spec ←]• [Hyaluronsäure][Substance] <2,5%>[Spec ←]
0.3	Annotations are only possible on the token level	<ul style="list-style-type: none">• The entity class should be assigned on the token level (for instance, “Ibuprofenallergie” is a <i>Finding</i>, although “Ibuprofen” is a <i>Substance</i>)	<ul style="list-style-type: none">• [Ibuprofenallergie][Finding]• [Tumorpatienten][Finding]• niedrige [HCC-Inzidenz][Finding detail=Diagnosis or Pathology]

		<ul style="list-style-type: none"> When the token itself is not an entity, the longest appropriate subtoken determines the class of the token, for instance “Tumorpapienten” is a <i>Finding</i>, although “Papienten” is not. 	<ul style="list-style-type: none"> [Prostatakarzinomzentren][Finding detail=Diagnosis or Pathology]
0.4	Composite nouns in an enumeration should be annotated separately.	<ul style="list-style-type: none"> Use the <i>fragment</i> annotation (see below). the “-” should not be part of the token 	<ul style="list-style-type: none"> [Chemo][Procedure suffix=therapie]- und [Strahlentherapie][Procedure]
0.5	Spelling mistakes should be ignored and annotated either way.	<ul style="list-style-type: none"> Also, if a space character is missing, the whole “compound word” gets annotated 	<ul style="list-style-type: none"> [Pap][Finding detail=Diagnosis or Pathology] <Gruppe III D1oder>[Spec ←]
0.6	Abbreviations are treated as entities	<ul style="list-style-type: none"> however, specifications do not need to target both the complete term and its abbreviation when both are present 	<ul style="list-style-type: none"> <3-Jahres>[Spec →] <progressionsfreie>[Spec → Überleben][Finding detail=Other Finding] (PFS)[Finding detail=Other Finding])
0.7	In rare cases words can also be annotated two or multiple times if necessary	<ul style="list-style-type: none"> This accounts especially for when a word in the context has (regarding our annotations) two different meanings Better discuss these cases with the group 	<ul style="list-style-type: none"> [Durchführung][Procedure detail=Diagnostic][Procedure detail=Therapeutic] <einer Biopsie][Procedure detail=Diagnostic]>[Spec ←] oder <[Ablatio Testis][Procedure detail=Therapeutic]>[Spec ← prefix=_einer_]
0.8	Words from other languages should be annotated analogously		<ul style="list-style-type: none"> [Cancer][Finding detail=Diagnosis or Pathology][Screening][Procedure detail=Diagnostic]
0.9	Annotations can be dependent of the context		<ul style="list-style-type: none"> [Immunsuppression][Procedure detail=Therapeutic] or

			<p>[Immunsuppression][Finding detail=Diagnosis or Pathology]</p> <ul style="list-style-type: none"> • [Tumorgrading][Procedure detail=Diagnostic] or [Tumorgrading][Finding detail=Diagnosis or Pathology] • Der [Nachweis][Procedure detail=Diagnostic] erfolgte or Es liegt ein [Nachweis][Finding detail=Diagnosis or Pathology] vor
0.10	Whether a word should get annotated is sometimes solely dependent of the context or respective specifications		<ul style="list-style-type: none"> • <unerwünschte>[Spec→] [Wirkung][Finding detail=Diagnosis or Pathology] <i>(here, even though “Wirkung” is usually not annotated, it represents a finding through the specification “unerwünschte”)</i>

Findings

“A clinical finding represents the result of a clinical observation, assessment or judgment and includes normal and abnormal clinical states (e.g. *asthma*, *headache*, *normal breath sounds*). The clinical finding hierarchy includes concepts used to represent diagnoses.”

SNOMED definition

Subclasses (detail)

Subclass	Definition	Examples
Diagnosis or Pathology	<ul style="list-style-type: none"> Always and necessarily abnormal Necessarily have an underlying pathological process Also includes symptoms Also includes viruses / bacteria etc. ICD codes are annotated as one coherent unit 	<ul style="list-style-type: none"> [Tumorpatienten][Finding detail=Diagnosis or Pathology] [Neurotoxizität][Finding detail=Diagnosis or Pathology] [CIN][Finding detail=Diagnosis or Pathology] [HPV Infektion][Finding detail=Diagnosis or Pathology] [Rezidiv][Finding detail=Diagnosis or Pathology] [Mangelzustände][Finding detail=Diagnosis or Pathology] <von Vitamin D>[Spec ←] [PET/CT-Positivität][Finding detail=Diagnosis or Pathology] [Symptome][Finding detail=Diagnosis or Pathology] <erhöhte>[Spec →][[Rate][Finding detail=Other Finding] <an [Dottersackanteilen][Finding detail=Diagnosis or Pathology]>, <<erhöhten>[Spec →][[AFP-Werten][Finding detail=Diagnosis or Pathology]>[Spec ← prefix=_an_] und <[TP53-Aberrationen][Finding detail=Diagnosis or Pathology]>[Spec ← prefix=_an_]] [Reduktion][Finding detail=Diagnosis or Pathology]<der [Ejektionsfraktion][Finding detail=Other Finding]>[Spec ←] [Auftreten][Finding detail=Diagnosis or Pathology]<<kardialer>[Spec→][[Symptome][Finding detail=Diagnosis or Pathology]>[Spec ←]

		<ul style="list-style-type: none"> • [HPV][Finding detail=Diagnosis or Pathology] • [Carcinoma in situ][Finding detail=Diagnosis or Pathology] • <<humane>[Spec→][Papillomviren][Finding detail=Diagnosis or Pathology]> • [ICD-10 C53][Finding detail=Diagnosis or Pathology] • [Nachweis][Finding detail=Diagnosis or Pathology] <von <high-risk>[Spec→] HPV Typen[Finding detail=Diagnosis or Pathology]>[Spec ←] • [Stadium][Finding detail=Diagnosis or Pathology] <der [CIN][Finding detail=Diagnosis or Pathology]>[Spec ←] • [Versagen][Finding detail=Diagnosis or Pathology] <der [Therapie][Procedure detail=Therapeutic]>[Spec ←] • Verlauf[-] der [Erkrankung][Finding detail=Diagnosis or Pathology] • [Komorbidität][Finding detail=Diagnosis or Pathology]
Other Finding	<ul style="list-style-type: none"> • May be normal (but not necessarily) • Other information about the state of health • May exist only at a single point in time • Also: a negative test (i.e. absence of pathology) • Also: outcomes, such as PFS • Also: risks and rates • Also: information about the patient, like sex, age, relative status etc. (however, information like sex should not be annotated when only contained implicitly (e.g. "Patientin")) • statistical expressions like "Risiko" when they contain information about the individual patient (e.g. "erhöhtes Risiko") 	<ul style="list-style-type: none"> • [Gesunde][Finding detail=Other Finding] • <histologischer>[Spec →] [Befund][Finding detail=Other Finding] • [PET/CT-Negativität][Finding detail=Other Finding] • [Alter][Finding] <jünger als 51 Jahre>[Spec] • [normale][Spec →][Ernährung][Finding detail=Other Finding] • [Mortalitätsrisiko][Finding detail=Other Finding] • [5-Jahres-Risiko][Finding detail=Other Finding] • [Abfall][Finding detail=Other Finding] • <im [Serum][Substance detail=Nutrient or Body Substance]>[Spec ←] • [Überleben][Finding detail=Other Finding] • <verminderte>[Spec→]<postoperative>[Spec→] • [Morbidität][Finding detail=Other Finding] • <subjektives>[Spec→][Erleben][Finding detail=Other Finding] • [Interaktion][Finding detail=Other Finding] • <schlechte>[Spec→][Prognose][Finding detail=Other Finding] • [Radonexposition][Finding detail=Other Finding] • das <subjektive>[Spec →] [Erleben][Finding detail=Other Finding] des Patienten

		<ul style="list-style-type: none"> • <geringere>[Spec→] [Rezidivrate][Finding detail=Other Finding] • <klinisches>[Spec→] [Erscheinungsbild][Finding detail=Other Finding] • [Frauen][Finding detail=Other Finding] • [Risikofaktoren][Finding detail=Other Finding] • [Malignitätspotenzial][Finding detail=Other Finding] • [Verwandte][Finding detail=Other Finding] <ersten Grades>[Spec ←] <von Patienten mit Pankreaskarzinom>[Finding detail=Diagnosis or Pathology]>[Spec ←] • <physiologischen>[Spec→] [Bedarf][Finding detail=Other Finding] • [Ansprechen][Finding detail=Other Finding] <der Therapie>[Procedure detail=Therapeutic]>[Spec ←] • [Mortalität][Finding detail=Other Finding] • [Tumoransprechen][Finding detail=Other Finding] • [V.a.][Finding detail=Other Finding] • [Verdacht][Finding detail=Other Finding] <auf Kolonkarzinom>[Finding]>[Spec ←] • [Therapiebedürftigkeit][Finding detail=Other Finding] • <signifikant höheres>[Spec→] [Risiko][Finding detail=Other Finding] • [Erstdiagnose][Finding detail=Other Finding] • [Fortschreiten][Finding detail=Other Finding] und [Dauer][Finding detail=Other Finding] der Erkrankung[Finding] • <[HIV-positive]>[Finding detail=Diagnosis or Pathology]>[Spec →] [Männer][Finding detail=Other Finding]
Counterexamples	<ul style="list-style-type: none"> • check the rules section for more 	<ul style="list-style-type: none"> • im Erwerbsleben stehend[-] • Modifikation[-] • Sensitivität[-] und Spezifität[-] • Inzidenz[-] • Inzidenzraten[-] • Indikation[-]

Rules

	Rule	Explanation	Examples
1.1	When in doubt, the result of a diagnostic test is rather a finding than a procedure	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> mit oder ohne [HPV Nachweis][Finding detail=Diagnosis or Pathology]
1.2	Findings do not have to be nouns, they can also be e.g. adverbs / adjectives	<ul style="list-style-type: none"> as with other findings, these should still be attributable to a patient context this rule only accounts when the adverb is describing a noun in a clinically relevant context (e.g. "Patient" or "Person") when inside a specification, adjectives / adverbs should not be annotated, nouns however should (see examples) 	<ul style="list-style-type: none"> <beruflich>[Spec →] [strahlenexponierte][Finding detail=Other Finding] Personen [bestrahlter][Procedure detail=Therapeutic] Patient <kolposkopisch[-] komplett beurteilbare>[Spec →] Platten-Zylinderepithelgrenze[Finding]
1.3	Words can become findings through their specification	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> <negative>[Spec →] [Wirkung][Finding detail=Diagnosis or Pathology] <transplantiertes>[Spec →] [Organ][Finding detail=Other Finding]
1.4	Efficacy of drugs	<ul style="list-style-type: none"> is usually not a finding, when no directionality is specified in a patient context 	<ul style="list-style-type: none"> Wirkung[-] von [Chemo][Procedure suffix=therapie]- und [Strahlentherapie][Procedure] (the "-" should not be part of the token!)

			<ul style="list-style-type: none"> • [Folsäure][Substance] könnte die Wirkung[-] von [5-FU][Substance] beeinflussen. • Wirksamkeit[-] der [Therapie][Procedure detail=Therapeutic]
1.5	No percentages / statistical numbers should be part of the annotation		<ul style="list-style-type: none"> • [PFS][Finding detail=Other Finding] von 94,5%
1.6	Specific endpoints of a study can be findings, but the general concept of an endpoint is not		<ul style="list-style-type: none"> • Patientenrelevante Endpunkte[-] wie [Gesamtüberleben][Finding detail=Other Finding] und <krankheitsfreies>[Spec →] [Überleben][Finding detail=Other Finding] wurden nicht untersucht.
1.7	Side-effects and complications are always pathological, unless they are clearly specified as desired		<ul style="list-style-type: none"> • [Nebenwirkungen][Finding detail=Diagnosis or Pathology] • [Komplikationen][Finding detail=Diagnosis or Pathology]
1.8	Parameters and body functions are other findings, unless they exceed some pathological threshold		<ul style="list-style-type: none"> • [QTc-Zeiten][Finding detail=Diagnosis or Pathology] <über 500 ms>[Spec ←] oder eine [Erhöhung][Finding detail=Diagnosis or Pathology] <um 60 ms>[Spec ←] • [Verlängerung][Finding detail=Diagnosis or Pathology] <der [QTc-Zeit][Finding detail=Other Finding] >[Spec ←]
1.9	<p>Tumor classifications are pathological or not depending on their meaning</p> <p>“Stadium” in a disease context is also generally considered as pathological finding</p>	<ul style="list-style-type: none"> • They usually constitute separate entities • TNM classification is generally considered as pathological finding • TNM expressions are annotated together even when there is a comma between them, otherwise (when they 	<ul style="list-style-type: none"> • [Lymphknotenmetastasen][Finding detail=Diagnosis or Pathology] ([N1][Finding detail=Diagnosis or Pathology]), [R1-Status][Finding detail=Diagnosis or Pathology] und ein <niedriger>[Spec→] [Differenzierungsgrad][Finding detail=Diagnosis or Pathology] ([G3][Finding detail=Diagnosis or Pathology])

		<p>occur in different parts of the sentence) they are annotated independently</p> <ul style="list-style-type: none"> • When a TNM complex is annotated together, and one part of that complex is considered pathological (i.e. the complex is not T0 N0 M0), the complex is annotated as pathological finding • When the TNM-parts occur singly (e.g. there are words between the m), they are rated individually as other finding or pathological finding (see example) 	<ul style="list-style-type: none"> • [R0][Finding detail=Other Finding] oder [R1][Finding detail=Diagnosis or Pathology] • [R0-Resektion][Finding detail=Other Finding] • [R1-Resektion][Finding detail=Diagnosis or Pathology] • [Grad I-II][Finding detail=Diagnosis or Pathology] <nach Olsen>[Spec ←] • [Grad 3][Finding detail=Diagnosis or • [Stadium T1, N1, M1][Finding detail=Diagnosis or Pathology] • [T1][Finding detail=Diagnosis or Pathology suffix=-Tumoren fragment=-Tumoren]-[T2-Tumoren][Finding detail=Diagnosis or Pathology] • [Stadien T1b][Finding detail=Diagnosis or Pathology] und [T1a][Finding detail=Diagnosis or Pathology] • [T1][Finding detail=Diagnosis or Pathology] und [N1][Finding detail=Diagnosis or Pathology], aber [M0][Finding detail=Diagnosis or Pathology Pathology]/[4][Finding detail=Diagnosis or Pathology prefix=Grad_ fragment=Grad 3]
1.1 0	Concrete locations / organs are usually <i>not</i> considered as findings, although the abstract property of being localized (“Lokalisation”) can be		<ul style="list-style-type: none"> • Der [Tumor][Finding detail=Diagnosis or Pathology] ist im vorderen Mediastinum[-] lokalisiert • <extragonadalen>[Spec→] [Lokalisationen][Finding detail=Diagnosis or Pathology]
1.11	Concrete concentration / quantity information can turn a substance into a finding		<ul style="list-style-type: none"> • [PSA][Finding detail=Diagnosis or Pathology] << 10ng/ml>[Spec ←]

1.1 2	Tumor markers are generally considered as pathological finding	<ul style="list-style-type: none"> • it can be context dependent whether a body substance is considered as tumor marker 	<ul style="list-style-type: none"> • [CA 125][Finding detail=Diagnosis or Pathology] • [CEA][Finding detail=Diagnosis or Pathology]
1.1 3	Mutations, when in a pathological context, are considered as pathological finding	<ul style="list-style-type: none"> • dna translocations are mutations as well 	<ul style="list-style-type: none"> • [t(11;14)][Finding detail=Diagnosis or Pathology]

Substances

“Substances represent general substances, the chemical constituents of pharmaceutical/biological products, body substances, dietary substances and diagnostic substances (e.g. *methane*, *insulin*, *albumin*).”

SNOMED definition

Subclasses (detail)

Subclass	Definition	Examples
Clinical Drug	<ul style="list-style-type: none">Usually pharmaceutical productExternally produced/obtained for therapeutic purposes	<ul style="list-style-type: none">[5-FU][Substance detail=Clinical Drug]die [Injektion][Procedure] <von [Insulin][Substance detail=Clinical Drug]>[Spec ←][Präparate][Substance detail=Clinical Drug][Placebo][Substance detail=Clinical Drug][Diclofenac-Natrium][Substance detail=Clinical Drug] <3%>[Spec ←] <in [Hyaluronsäure][Substance detail=Clinical Drug]>[Spec ←] <2,5% Gel>[Spec ←][Spender-T-Zellen][Substance detail=Clinical Drug]

Nutrient or Body Substance	<ul style="list-style-type: none"> • A nutrient / body substance is part of a physiological body. When diseases occur because of the absence of such a substance (i.e. reduced supply), the “medication” for that deficiency is still a nutrient / body substance (example: scurvy → Vitamin C). • (If not reduced supply but a pathological process is the reason for the deficiency state, the substance is more likely a drug, e.g. Diabetes → Insulin) • Specific genes as well as their respective proteins are also considered as body substances (more abstract notations like Exon[-], however, not) • Supplements are nutrients 	<ul style="list-style-type: none"> • [Vitamine][Substance detail=Nutrient or Body Substance] • [Fettsäuren][Substance detail=Nutrient or Body Substance] • [Antioxidantien][Substance detail=Nutrient or Body Substance] • [Folsäure][Substance detail=Nutrient or Body Substance] • [Glucose][Substance detail=Nutrient or Body Substance] • [LDL][Substance detail=Nutrient or Body Substance] • <Alkalische>[Spec →] [Phosphatase][Substance detail=Nutrient or Body Substance] • [Nahrungsergänzungsmittel][Substance detail=Nutrient or Body Substance] • <freie>[Spec→] [Radikale][Substance detail=Nutrient or Body Substance] • [BRCA1][Substance detail=Nutrient or Body Substance] • Hemmung[-] der [Cyclooxygenase][Substance detail=External Substance]
External Substance	<ul style="list-style-type: none"> • External substances that the body does normally does not get in contact with, • Potentially harmful (e.g. carcinogens) • Not applied by a doctor 	<ul style="list-style-type: none"> • [Radon-222][Substance detail=External Substance] • [18F-Fluoromethylcholin][Substance detail=External Substance] • [Chemikalien][Substance detail=External Substance] • [Feinstaub][Substance detail=External Substance] • <künstliche>[Spec →] [Mineralfasern][Substance detail=External Substance]
Counterexamples	<ul style="list-style-type: none"> • check the rules section for more 	<ul style="list-style-type: none"> • Exon[-]

Rules

	Rule	Remarks	Examples
2.1	Modes of administration are not substances	<ul style="list-style-type: none"> If a term solely refers to a <i>mode of administration</i> rather than a concrete substance or class of substances, the entity should not be annotated 	<ul style="list-style-type: none"> • Einzelsubstanzen[-] • Mischungen[-] • Vehikel-Creme[-]
2.2	Living organisms are also substances when used as medications	<ul style="list-style-type: none"> In these cases, they would usually get the detail tag "Clinical Drug" 	<ul style="list-style-type: none"> • Eine Kombination[-] aus [Lactobacillus][Substance detail=Clinical Drug] und [Ballaststoffen][Substance detail=Nutrient or Body Substance] senkt nach einer Studie...
2.3	Physical compounds are only substances if their chemical composition is clearly relevant in a clinical context		<ul style="list-style-type: none"> • Gestein[-] • Böden[-] • Außenluft[-]
2.4	Radiation is not a substance		<ul style="list-style-type: none"> • Alphastrahlung[-]
2.5	Distinction between drugs and nutrients / body substances	<ul style="list-style-type: none"> A nutrient / body substance is part of a physiological body. When diseases occur because of the absence of such a substance, the "medication" for that deficiency is still a nutrient / body substance (example: scurvy → Vitamin C). However, when diseases occur because of a reduced or increased production of a substance or a substance is used therapeutically in a 	<ul style="list-style-type: none"> • <Topisch appliziertes>[Spec→] [Vitamin C][Substance detail=Clinical Drug] • [Vitamin C][Substance detail=Nutrient or Body Substance] bei Skorbut[Finding] • [Retinoiden][Substance detail=Clinical Drug] und [Interferonen][Substance detail=Clinical Drug]

		non-physiological way, it is considered rather a drug (example: Diabetes type 1 → Insulin)	
2.6	Nutrients / Body substances with specific quantities become a finding	<ul style="list-style-type: none"> if the finding is clearly pathological, they are considered as pathological finding, if not, as other finding In case of doubt, they are rather considered as other finding 	<ul style="list-style-type: none"> <Korrigiertes>[Spec→] [Serumkalzium][Finding detail=Other Finding] <10,0mg/dl>[Spec ←] [Neutrophilen-Anzahl][Finding detail=Other Finding] <<4,5/ml>[Spec ←]
2.7	Parts of the body should not be annotated	<ul style="list-style-type: none"> e.g. organs, parts of organs, conglomerates of molecules (like cell organells etc.) 	<ul style="list-style-type: none"> Zelle[-] Zellkern[-] Chromosom[-] Leber[-]
2.8	Combinations of drugs	<ul style="list-style-type: none"> the word Kombination[-] is not annotated (apart from being part of a specification) When drug A is combined with drug B, the second mentioned drug should be annotated as a specification of the first mentioned drug (see examples) the combination of multiple drugs requires the chain rule (4.11) possible formulations / signs to introduce a specification are “in Kombination mit”, “mit”, “plus, “+” 	<ul style="list-style-type: none"> [DrugA][Substance] <in Kombination mit [DrugB][Substance]> [DrugA][Substance] <mit [DrugB][Substance]> [DrugA][Substance]<+[DrugB][Substance]> [DrugA][Substance]<+[DrugB][Substance]> [DrugA][Substance]<+[DrugC][Substance]> [DrugA][Substance] / [DrugB][Substance]>

		<ul style="list-style-type: none"> • “/” does not introduce a specification as it is not clear whether the drugs are really combined or just presented as alternatives 	
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Procedures

“Procedures represent activities performed in the provision of health care. This includes not only invasive procedures but also administration of medicines, imaging, education, therapies and administrative procedures (e.g. *appendectomy*, *physiotherapy*, *subcutaneous injection*).”

SNOMED definition

Subclasses (detail)

Subclass	Definition	Examples
Diagnostic	<ul style="list-style-type: none"> • Generally “measuring” something • Classification systems, unless they have a concrete value (then they are findings) • MRI sequences are diagnostic procedures as well 	<ul style="list-style-type: none"> • [Röntgen-Thorax][Procedure detail=Diagnostic] • [Kolposkopie][Procedure detail=Diagnostic] • <histopathologische>[Spec →] [Evaluierung][Procedure detail=Diagnostic] • [Verlaufsbeobachtung][Procedure detail=Diagnostic] • [Beobachtung][Procedure detail=Diagnostic] • [PET/CT][Procedure detail=Diagnostic] • [GHSG-Risikostratifizierung][Procedure detail=Diagnostic] • [Blutsenkungsgeschwindigkeit][Procedure detail=Diagnostic] • [Beobachtungsarm][Procedure detail=Diagnostic] • <korrekten>[Spec →] [Klassifikation][Procedure detail=Diagnostic]

		<p><des [EGKZT][Finding detail=Diagnosis or Pathology]>[Spec ←]</p> <p><nach IGCCCG>[Spec ←]</p> <ul style="list-style-type: none"> • [IGCCCG-Klassifikation][Procedure detail=Diagnostic] • [T1-Sequenz][Procedure detail=Diagnostic] • [Tumormarkerbestimmung][Procedure detail=Diagnostic] • [Nachsorge][Procedure detail=Diagnostic] • [Vorsorge][Procedure detail=Diagnostic] • [Indikationsstellung][Procedure detail=Diagnostic] • [Hospital Anxiety and Depression Scale][Procedure detail=Diagnostic] • [Biopsat][Procedure detail=Diagnostic] • [Resektat][Procedure detail=Diagnostic] • [Klinische Chemie][Procedure detail=Diagnostic]
Therapeutic	<ul style="list-style-type: none"> • Any reactive or preventive intervention • also: abstract procedures with an interventional character (like “Zufuhr von Mikronährstoffen”, “Einleitung der Therapie” or “Dosisänderung”) • also: Tools / devices that represent a therapeutic procedure (see rule 3.4) 	<ul style="list-style-type: none"> • [Chemotherapie][Procedure detail=Therapeutic] • <parenterale>[Spec →] • [Ernährung][Procedure detail=Therapeutic] • [Diät][Procedure detail=Therapeutic] • Es wurde eine [Immunsuppression][Procedure detail=Therapeutic] durchgeführt (→ depending on the context can also be a finding!) • [Laservaporisation][Procedure detail=Therapeutic] • [Intervention][Procedure detail=Therapeutic]<zur Senkung der [Radonexposition][Finding]>[Spec ←] • [Therapiearm][Procedure detail=Therapeutic] • [Bestrahlungsarm][Procedure detail=Therapeutic] • [Einleitung][Procedure detail=Therapeutic]<der [Therapie][Procedure detail=Therapeutic]>[Spec ←] • <konsequentes>[Spec→][Management][Procedure detail=Therapeutic]

		<ul style="list-style-type: none"> • [Selbsthilfegruppen][Procedure detail=Therapeutic] und <soziale>[Spec→][Betreuung][Procedure detail=Therapeutic] • [Obst][Procedure detail=Therapeutic suffix=zufuhr]- und [Gemüsezufuhr][Procedure detail=Therapeutic] • [Einsatz][Procedure detail=Therapeutic] eines [Medikaments][Substance] • [Psychoonkologische Versorgung][Procedure detail=Therapeutic] • <Palliative>[Spec→][Behandlungssituation][Procedure detail=Therapeutic] • Thulium:YAG-Laser (2010 nm) führen zu einer [Ablation][Procedure detail=Therapeutic] und [Koagulation][Procedure detail=Therapeutic] • [Vorbeugen][Procedure detail=Therapeutic] und [Lindern][Procedure detail=Therapeutic] von Leid[Finding] • [Traditionelle chinesische Medizin][Procedure detail=Therapeutic] • [Aerobic][Procedure detail=Therapeutic] und [Yoga][Procedure detail=Therapeutic] • Abschluss[-] der [Primärtherapie][Procedure detail=Therapeutic]
Counterexamples	<ul style="list-style-type: none"> • check the rules section for more 	<ul style="list-style-type: none"> • Risikoabwägung[-] • Hemmung[-] • experimentelle in vitro Untersuchungen[-] (in this case, “Untersuchungen” related to laboratory examinations and not to patients) • ärztliche Aufklärung[-]

Rules

	Rule	Remarks	Examples
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3.1	Clinical trials and other study designs are not procedures	<ul style="list-style-type: none"> However, inclusion in a trial as a therapeutic option can be 	<ul style="list-style-type: none"> Studien[-] Kohortenstudie[-] Fall-Kontroll-Studie[-] Ernährung[-] (--> without further specification is not a procedure)
3.2	Chemotherapeutic regimen are procedures, not substances	<ul style="list-style-type: none"> individual components of the regiment can be annotated as substances 	<ul style="list-style-type: none"> <zwei>[Spec → suffix=Zyklen] / <drei Zyklen>[Spec →] ABVD[Procedure detail=Therapeutic]
3.3	Trial names can be procedures, when they are abbreviations	<ul style="list-style-type: none"> this might need some research by the annotator 	<ul style="list-style-type: none"> [ACTICCA][Procedure detail=Therapeutic Procedure] BILCAP-Daten[-]
3.4	Tools / devices are annotated when they represent a therapeutic procedure	<ul style="list-style-type: none"> E.g. "Pflaster", as it really represents the therapeutic procedure, is annotated A counterexample would be Skalpell[-] as it does not represent a therapeutic procedure (e.g. the surgery) but is rather a means to an end 	<ul style="list-style-type: none"> <lokanästhetisch wirksames>[Spec→][Pflaster][Procedure detail=Therapeutic] <medizinische>[Spec→][Verbände][Procedure detail=Therapeutic] [ZVK][Procedure detail=Therapeutic] Skalpell[-]
3.5	Branches of medicine etc. are not considered therapeutic procedures		<ul style="list-style-type: none"> Palliativmedizin[-] Onkologie[-]

Specification

Rules

	Rule	Remarks	Examples
4.1	Multiple specifications get annotated separately	<ul style="list-style-type: none"> however, semantically dependent tokens (“natürlich vorkommend”) are annotated together as a rule of thumb, specifications should be annotated separately if they could be omitted without making the sentence ungrammatical this should also happen even if the outcome is quite granular 	<ul style="list-style-type: none"> ein <natürlich vorkommendes>[Spec→] <radioaktives>[Spec→] [Edelgas][Substance detail=External Substance] [Capecitabin][Substance detail=Clinical Drug](<1250 mg/m2>[Spec ←]<zweimal täglich>[Spec ←]<an Tag 1 bis 14>[Spec ←]<bei einer Zyklusdauer von 21 Tagen, insgesamt 8 Zyklen>[Spec ←]) [Konsum][Finding detail=Diagnosis or Pathology] <von [Tabak][Substance detail=External Substance]>[Spec ←] oder <[Alkohol][Substance detail=External Substance]>[Spec ← prefix=_von_]
4.2	Specifications can be nested	<ul style="list-style-type: none"> however, we want to avoid more than one level of nesting 	<ul style="list-style-type: none"> [Inhalation][Finding] <des <radioaktiven>[Spec →] Radons[Substance]>[Spec ←] [Zustand][Finding] <nach <früherer>[Spec →] [Behandlung][Procedure] einer [CIN][Finding]>[Spec ←] Nachweis[Finding] <von [CIN][Finding]<1>[Spec ←]>[Spec ←] <in der [ECC][Procedure]>[Spec ←]

4.3	Specifications must actually specify something	<ul style="list-style-type: none"> • unspecific modifiers or too general information should not be annotated 	<ul style="list-style-type: none"> • unterschiedliche [Präparate][Substance] • entsprechende [Supplementation][Procedure] • die [Betreuung][Procedure] des Patienten <i><durch einen erfahrenen Ernährungsmediziner></i>[Spec ←] • die [Strahlenexposition][Finding] der Bevölkerung
4.4	Specifications should be long enough to make the combination of specification and entity self-contained	<ul style="list-style-type: none"> • articles and prepositions can be part of the specification • conjunctions (und / oder), are usually not and constitute separate specifications 	<ul style="list-style-type: none"> • [Tumoren][Finding] <i><des oberen Gastrointestinaltraktes></i>[Spec ←] und <i><des Pankreas></i>[Spec ←]
4.5	Dosage information or cycles constitute a specification	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • <i><30Gy></i>[Spec →] IN-RT[Procedure detail=Therapeutic]
4.6	Statistical measures do not constitute a specification	<ul style="list-style-type: none"> • in general, outcomes of a study population are not related to individual patients 	<ul style="list-style-type: none"> • [PFS][Finding] 95%[-]
4.7	Filler words should be omitted from specifications	<ul style="list-style-type: none"> • v.a., z.B. don't need to be part of a specification of omitting them does not change the meaning of the sentence 	<ul style="list-style-type: none"> • [Therapie][Procedure]<i><der [Diarrhoe]</i>[Finding]>[Spec ←] v.a.[-] <i><unter [Irinotecan]</i>[Substance]>[Spec ←]
4.8	On specification level, words that normally would only get annotated because of the meaning of a <i>subtoken</i> or because they are <i>adverbs</i> derived from a noun, should not	<ul style="list-style-type: none"> • Normally, words get also annotated due to the meaning of their subtokens (e.g. [antitumoral][Finding detail=Diagnosis or Pathology]) 	<ul style="list-style-type: none"> • <i><antitumorale></i>[Spec →] [Therapie][Procedure detail=Therapeutic] (here, "antitumoral" is not annotated as Finding), while: • [Therapie][Procedure detail=Therapeutic]<i><des [Tumores]</i>[Finding]>[Spec ←]

	be annotated separately as Finding, Procedure or Substance	<ul style="list-style-type: none"> However, this should not be done, when these words are completely identical to a specification (and words should ideally only have a single annotation) 	<ul style="list-style-type: none"> <kolposkopisch[-] komplett beurteilbare>[Spec →] Platten-Zylinderepithelgrenze[Finding] (here, adverb “kolposkopisch” is part of a specification and therefore does not get annotated separately, the word “Kolposkopie” however would get annotated)
4.9	Starts and ends of value ranges are not individually annotated		<ul style="list-style-type: none"> [Deauville-Score][Finding detail=Other Finding] <von 4-5>[Spec ←] [ECOG][Finding detail=Other Finding] <0-1>[Spec ←]
4.10	Prepositions like “bei”, “zur” und “mit” can break a chain of Specifications, unless they are absolutely necessary for constituting the meaning of an entity	<ul style="list-style-type: none"> This rule is rather arbitrary to avoid overly long specification chains 	<ul style="list-style-type: none"> <geringere>[Spec→] Rezitivrate[Finding detail=Other Finding] bei[-] Vitamin-A-Gabe[Procedure detail=Therapeutic] <„ausgebrannten“>[Spec→][[KZT]<des Hodens>[Spec ←] mit[-] <retroperitonealer>[Spec→][[Metastasierung]
4.11	Chains of specification work just like a long specification span (chain rule)		<ul style="list-style-type: none"> [Vermeidung][Procedure detail=Therapeutic] <<unerwünschter>[Spec →] [Nebenwirkungen][Finding detail=Diagnosis or Pathology]>[Spec ←] <in der Therapie][Procedure detail=Therapeutic]>[Spec ←] <von Zervixkarzinompatientinnen][Finding detail=Diagnosis or Pathology]>[Spec ←] Das <nicht-steroidale>[Spec →] [Antirheumatikum][Substance detail=Clinical Drug] [Diclofenac][Substance detail=Clinical Drug] ist in Form eines dreiprozentigen Gels in [Hyaluronsäure][Substance detail=Clinical Drug] <2,5%>[Spec ←] zur <topischen>[Spec →]

			<p>[Behandlung] <von [AK][Finding detail=Diagnosis or Pathology]>[Spec ←] <bei [Erwachsenen][Finding detail=Other Finding]>[Spec ←] <ul style="list-style-type: none"> • [Frauen][Finding detail=Other Finding] <mit [Strahlentherapie][Procedure detail=Therapeutic]>[Spec ←] <wegen eines Zervixkarzinoms[Finding detail=Diagnosis or Pathology]>[Spec ←] </p>
4.12	Specification should be clinically relevant / relevant for the individual patient	<ul style="list-style-type: none"> • Especially when a token gets only annotated because of a subtoken, and a spec. does not relate to that subtoken, it should not get annotated (see example) 	<ul style="list-style-type: none"> • Krebsregister[Finding detail=Diagnosis or Pathology] des Robert-Koch-Instituts[-] • Todesursachenstatistik[Finding detail=Diagnosis or Pathology] • Sterbefälle[Finding detail=Diagnosis or Pathology]
4.13	Negations (or analogous expressions) are not considered as specifications		<ul style="list-style-type: none"> • ohne[-] • keine[-]

Fragment Annotation

Examples
<ul style="list-style-type: none"> • [ungünstigeres][Finding detail=Other Finding suffix=_Überleben fragment=Gesamtüberleben] , [rezidivfreies][Finding detail=Other Finding suffix=_Überleben fragment=Gesamtüberleben] und [Gesamtüberleben] • [BRAF][Substance detail=Clinical Drug suffix=-Inhibitoren fragment=-Inhibitoren]- und die [MEK-Inhibitoren][Substance detail=Clinical Drug]

Rules

	Rule	Remarks	Examples
X.1	Multiple specifications for an entity do not need the "fragment" attribute	<ul style="list-style-type: none"> • however, a prefix / suffix should still be included for elliptical constructs within specifications 	<ul style="list-style-type: none"> • [Pap][Finding] <IID2>[Spec ←] oder <IVA-p>[Spec ←] • <zwei>[Spec → suffix=_Zyklen_] / <drei Zyklen>[Spec →] [ABVD][Procedure detail=Therapeutic]
X.2	Spaces in prefixes / suffixes should be denoted by underscores (" _ ")		<ul style="list-style-type: none"> • [Vitamine C][Substance] und [E][Substance fragment=Vitamine C prefix=Vitamine _]
X.3	"-" should not be part of the annotation		<ul style="list-style-type: none"> • [Chemo][Procedure suffix=therapie]- und [Strahlentherapie][Procedure]
X.4	Prefixes / suffixes should also include filler words		<ul style="list-style-type: none"> • [Neurotoxizität][Finding detail=Diagnosis or Pathology] <unter Cisplatin>[Spec ←] und <Taxol>[Spec ← prefix=_unter_]

X.5	Fragmented specifications can have multiple prefixes / suffixes	<ul style="list-style-type: none"> The prefixes / suffixes can relate to the respective other specification 	<ul style="list-style-type: none"> [Immuntherapie][Procedure detail=Therapeutic] <mit anti-CTLA4>[Spec ← suffix=_Antikörper] und <anti-PD1 Antikörper>[Spec ← prefix=_mit_]
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