

Neoplastic diseases in children up to 15 y of age

- leukemias 35%
- CNS neoplasms 28%
- lymphomas 11%
- neuroblastic tumors 6%
- renal tumors 6%
- rhabdomyosarcoma 6%
- osteosarcoma 2,9%
- retinoblastoma 2,7%
- Ewing sarcoma 2%
- hepatoblastoma 0,7%

- germ cell tumors

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age related differences in the incidence

< 5 y: ALL, embryonal neoplasms – MB, NB, WT, RMS, HB

>10-15 y: lymphomas (NHL, HL), bone tumors, germinal cell tumors

Leukemia

ALL

B cell line

precursor B cell leukemias

T cell line

precursor T cell leukemias

AML

Lymphomas

B cell lymphomas

Burkitt lymphoma

DLBCL

precursor B cell lymphoma (B lymphoblastic lymphoma / leukemia)

T cell lymphomas

large cell anaplastic lymphoma (ALCL)

precursor T cell lymphoma (T lymphoblastic lymphoma / leukemia)

Hodgkinův lymfom

classical

nodular lymphocyte predominant HL

Tumors of the CNS

astrocytomas – pilocytic, anaplastic....

glioblastoma

medulloblastoma

ependymoma – classical, anaplastic

germinoma

craniopharyngeoma

dysembryoblastic glioneural tumor

Neuroblastic tumors

tumors of the sympathetic neural system

neuroblastoma – ganglioneuroblastoma x **ganglioneuroma**

malignant

benign

grade of malignancy varies

highly malignant

intermediate

favourable

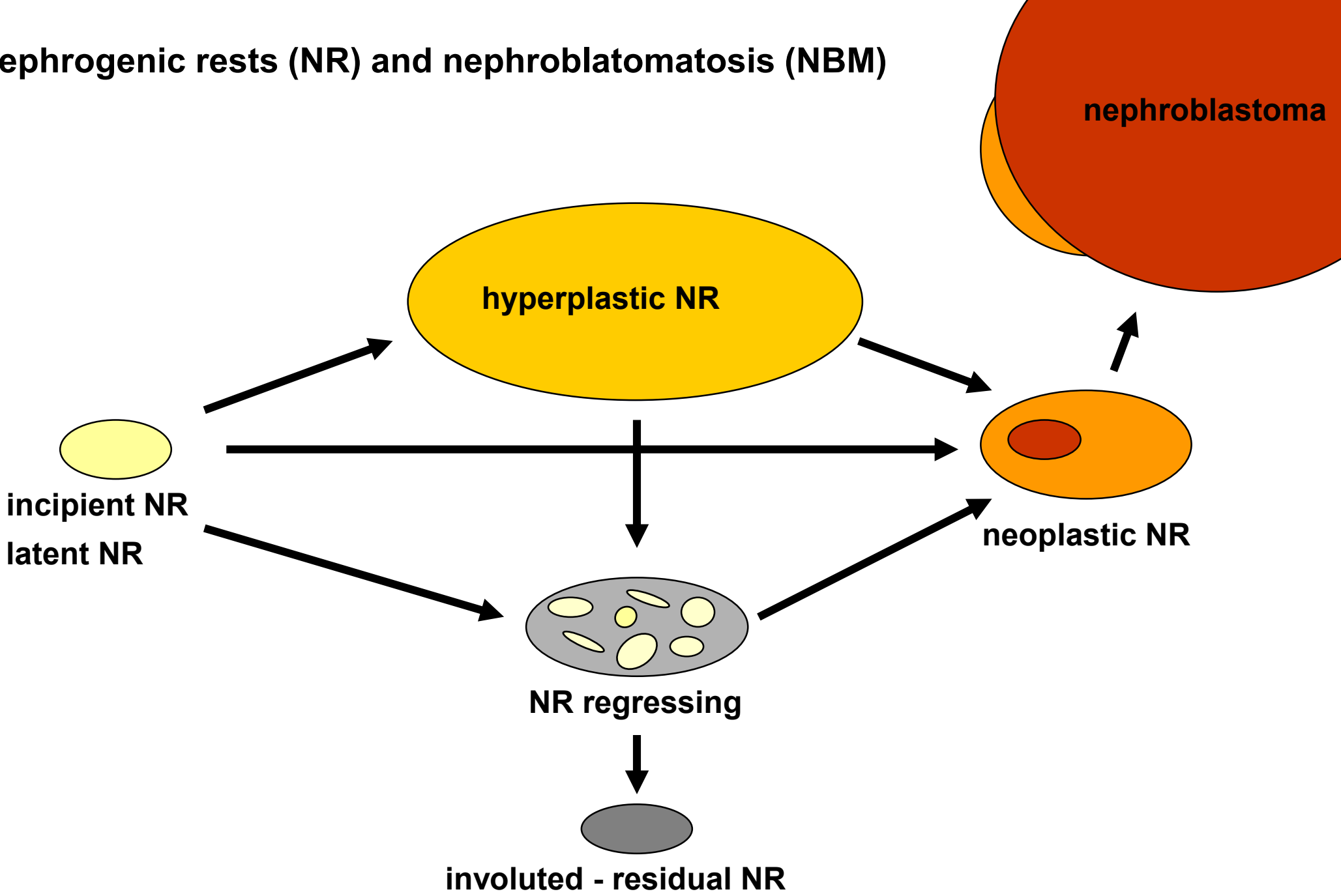
Neuroblastoma, gene MYCN

Renal tumors in childhood

- **nephroblastoma / Wilms tumor and precursor lesions**
- **clear cell sarcoma**
(bone metastasizing renal tumor of childhood BMRTCh)
- **rhabdoid tumor**
- **renal cell carcinoma (conventional, variants)**

- **mesoblastic nephroma**

Nephrogenic rests (NR) and nephroblastomatosis (NBM)



Soft tissue tumors – malignant, locally aggressive, benign

- **rhabdomyosarcomas**
 - embryonal
 - alveolar
 - spindle cell
- **Ewing sarcoma**
- **synovial sarcoma**
- **fibromatosis**
- **infantile fibrosarcoma**
- **myofibroblastic inflammatory tumor**
- **hemangiomas**
- **lymfangiomas**

Rhabdomyosarcoma - embryonal, botryoid subtype

Rhabdomyoma

heart - *hamartoma*

tongue

vagina

other rare sites

Retinoblastoma

Hepatoblastoma - fetal

Hepatoblastoma - embryonal

Infantile fibrosarcoma

rare

extremities

large

favourable

Inflammatory myofibroblastic tumor

Germ cell tumors

teratomas

mature

immature

malignant

yolk sac tumor

embryonal carcinoma

dysgerminoma

Metastatic tumors

lymph nodes - examples

thyroid papillary carcinoma

undifferentiated nasopharyngeal carcinoma

blood born organ metastazasing - examples

lungs – osteosarcoma, nephroblastoma, rhabdomyosarcoma

brain – neuroblastoma, rhabdoidní tumor – kidney, soft tissues

liver – neuroblastoma

bones – neuroblastoma, renal clear cell sarcoma

implantation - examples

brain-meningeal spread – gliomas, medulloblastoma

GIT-peritoneal implantation – carcinomas (liver, colon)