**Table S2.** Subset of non-lethal skeletal dysplasia. AD indicates autosomal dominant, AR indicate autosomal recessive. EO indicates that the dysplasia interferes with endochondral ossification, while IO indicates that the dysplasia interferes with intramembranous ossification.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Disorder | Inheritance | Gene | Ossification | Characteristic |
| Achondroplasia | AD | *FGFR3* | EO; IO | Expansion growth plate, change in skull bones (nasal and frontal)1 |
| Pseudoachondroplasia | AD | *COMP* | EO | Growth plate disorganized, reduce PC and increased apoptosis2 |
| Rhizomelic chondrodysplasia punctata | AR | *PEX7* | EO; IO | Neurological impairment, cataracts, facial dysmorphys3 |
| Spondylo-epiphyseal dysplasia | AD | *COL2A1* | EO; IO | Short limbs and trunk. Scoliosis. Early arthritis. Cleft palate4 |
| Metaphyseal chondrodysplasia Jansen-type | AD | *PTHR1* | EO; IO | Severe. Hindlimbs short and angulated  Spaced and prominent eyes. High skull vault5 |
| Metaphyseal chondrodysplasia Schmid-type | AD | *COL10A1* | EO | Skeletal changes appear during postnatal development. Short stature4 |
| Hypophosphatasia | AR or AD | *TNSALP* | EO | Short and bowed limbs and dental disease. Hypomineralization and diaphyseal spur6 |
| Diastrophic dysplasia | AR | *SLC26A2* | EO; IO | Angulated thumbs, scoliosis, sometimes cleft palate7 |
| Campomelic dysplasia | AD | *SOX9* | EO; IO | Short bowed limbs, and short hand and feet. Head facial deformities8,9 |
| Pallister-Hall syndrome | AD | *GLI3* | EO; IO | Polydactyly, Bifid epiglottis, flat nasal bridge9,10 Biesecker, Krakow |

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