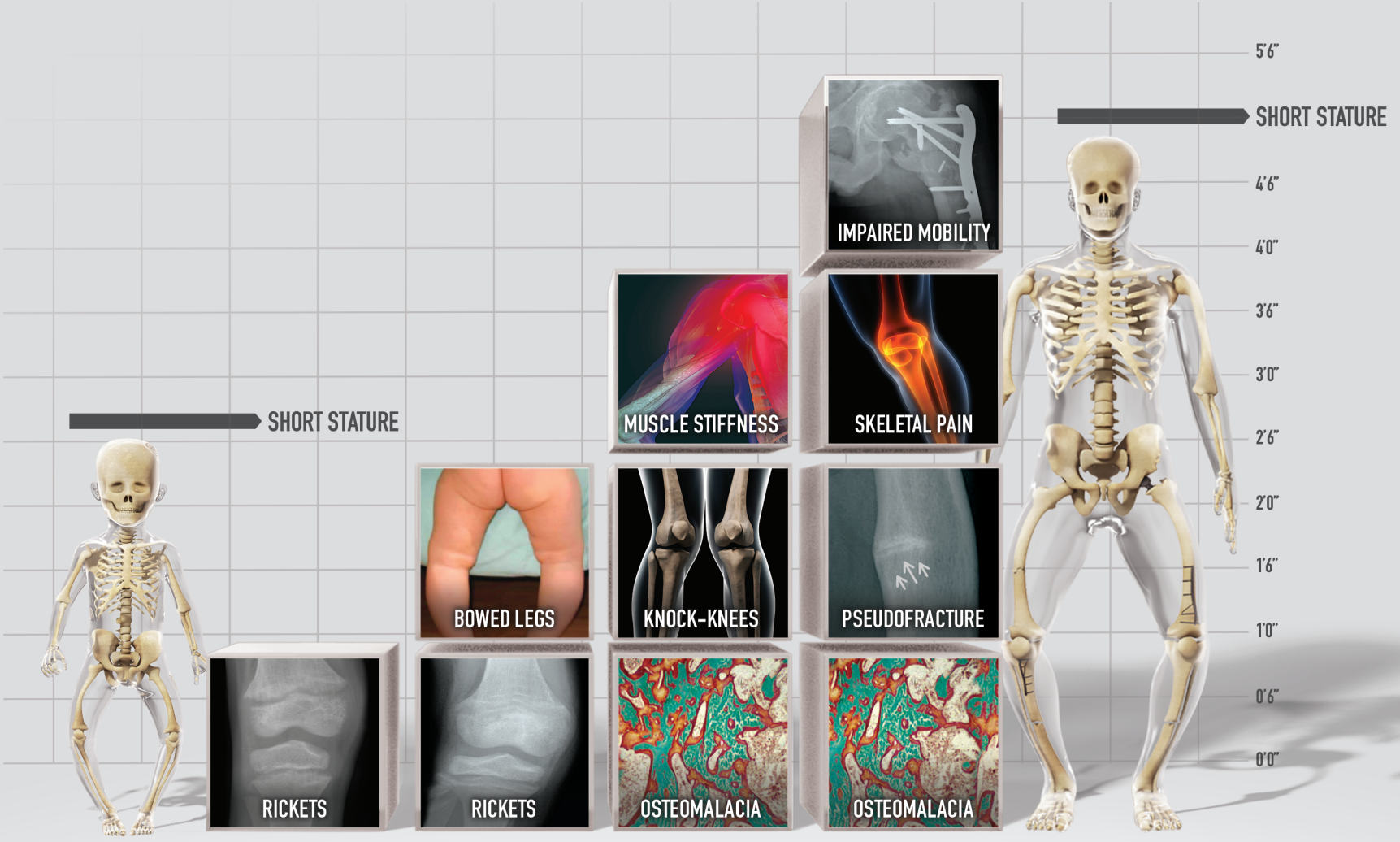
HEREDITARY, PROGRESSIVE, AND LIFELONG

X-LINKED HYPOPHOSPHATEMIA (XLH)



INCREASED FGF23 ACTIVITY: A LIFETIME OF IMPACT

TODDLER • ADOLESCENT • YOUNG ADULT • MATURE ADULT

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DIAGNOSIS AND ASSESSMENT

A DIAGNOSIS OF XLH IS TYPICALLY BASED ON CLINICAL AND BIOCHEMICAL FINDINGS IN COMBINATION WITH FAMILY HISTORY

FAMILY HISTORY

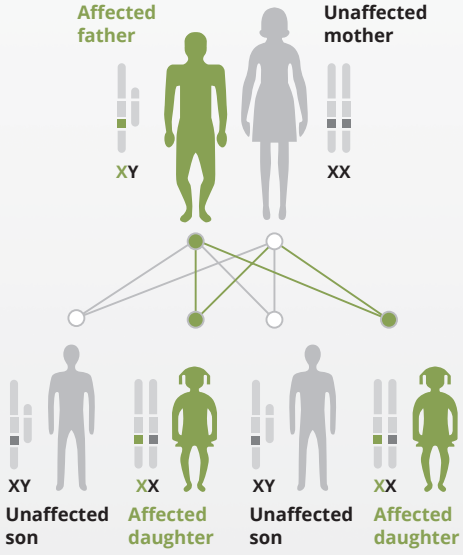
WITH KNOWN FAMILY HISTORY OF XLH

XLH is inherited in an **X-linked dominant** pattern.[1] In a family with a history of XLH, screen for other family members. This can help you identify previously undiagnosed individuals

WITHOUT A KNOWN FAMILY HISTORY

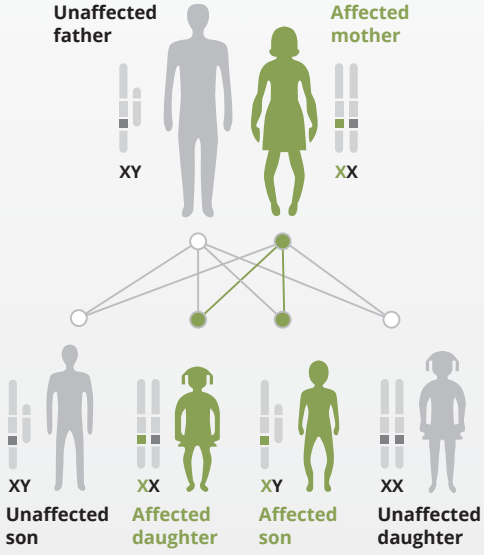
About 20% to 30% of XLH cases are spontaneous.[2] Ask about his/her medical history of short stature, rickets, osteomalacia, osteoarthritis, and dental abscesses, which may indicate XLH

AFFECTED FATHER



All daughters affected, no sons affected

AFFECTED MOTHER



Each child has a 50% chance of inheriting XLH, regardless of sex

A diagnosis of XLH can be confirmed through genetic testing for variants of the *PHEX* gene

Family history, clinical findings, and biochemical tests can help establish a diagnosis of XLH

CLINICAL FINDINGS

PREDOMINANT FINDINGS IN CHILDREN

Rickets, lower extremity bowing, leg deformities, pain, short stature, and gait disturbances.[1,3,4] Confirm skeletal findings through radiography.[1] Other signs and symptoms may also include dental abscesses, craniosynostosis, and Chiari malformations[1,4]

PREDOMINANT FINDINGS IN ADULTS

Adults with XLH may present with osteomalacia manifesting as bone and muscle pain, enthesopathy, fractures, and pseudofractures. Other signs and symptoms may also include waddling gait, dental abscesses, and hearing loss[1,3-6]

BIOCHEMICAL FINDINGS

Include age- and gender-normalized levels of serum phosphorus in metabolic panels for an accurate diagnosis. Low phosphate levels and low TmP/GFR ratio are the most relevant biochemical findings for XLH[1,3]

Biochemical Test	XLH[1,7]
Serum phosphorus	↓
$1,25(OH)_2D$	↓ or inappropriately normal
25(OH)D	normal
TmP/GFR	↓
ALP	↑
Serum calcium	normal
Urinary calcium	normal to ↓
PTH	normal or slightly ↑

Other biochemical tests that may be useful for establishing the diagnosis of XLH include serum alkaline phosphatase (ALP) levels and FGF23 levels. Alkaline phosphatase can be a good marker of skeletal health in children but not necessarily for adults.[1]

$1,25(OH)_2D$ = 1,25-dihydroxyvitamin D (calcitriol); 25(OH)D = 25-hydroxyvitamin D (calcifediol); ALP = alkaline phosphatase; PTH = parathyroid hormone; TmP/GFR = ratio of tubular maximum reabsorption of phosphate to glomerular filtration rate; XLH = X-linked hypophosphatemia.

XLH HAS A LIFELONG IMPACT ON PATIENTS

IN PATIENTS WITH XLH, CHRONIC HYPOPHOSPHATEMIA DUE TO INCREASED FGF23 ACTIVITY RESULTS IN POOR SKELETAL, MUSCULAR, AND DENTAL HEALTH AND IMPAIRED PHYSICAL FUNCTION

XLH IS A HEREDITARY, PROGRESSIVE, AND LIFELONG DISEASE

FGF23 IS THE ROOT CAUSE OF XLH

RICKETS AND OSTEOMALACIA ARE THE UNDERLYING SOURCES OF COMPOUNDING AND PROGRESSIVE SYMPTOMS OF XLH

XLH POSES A SIGNIFICANT BURDEN ON THE DAILY LIVES OF CHILDREN AND ADULTS DUE TO IMPAIRED PHYSICAL FUNCTION

FAMILY HISTORY, CLINICAL FINDINGS, AND BIOCHEMICAL TESTS CAN BE USED TO ESTABLISH A DIAGNOSIS OF XLH

Learn more at XLHLink.com

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MRCP-KRN23-00122 03/2019

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