## Pelvic Osteotomies

### Classification

<table>
<thead>
<tr>
<th>Redirectional</th>
<th>Shape-changing</th>
<th>Augmentation</th>
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</table>
| Reorient the existing acetabulum  
Do not change its shape | Changes the shape of the acetabulum by ‘folding down’ the roof  
Makes it smaller | Adds weight-bearing surface to the existing acetabulum |

### Osteotomies

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| Salter  
Sutherland*  
Steel  
Eprright*  
Wagner*  
Tonnis  
Ganz | 1 cut  
2 cuts  
3 cuts  
Cylindrical  
Spherical  
3 cuts close  
3 cuts even closer  
Periacetabular |  
Dega  
Albee  
San Diego  
Pemberton  
Hinge in roof  
Hinge in roof  
Hinge in roof  
Hinge in triradiate cartilage, bigger fold |  
Chiari  
Staheli  
Shift ilium  
Add graft |

* = Historical interest

### Effects

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| Bearing surface is articular cartilage  
Immediate congruency  
Shown in order of increasing versatility and increasing technical difficulty  
Salter limited to 13° additional coverage  
Ganz & Tonnis unlimited | Bearing surface is articular cartilage  
Hinge produces a ‘corner’ that must be remodeled into round, requiring future remodeling potential | Bearing surface is capsule  
Chiari provides immediate bony stability  
Staheli can be made as large and as round as desired |

### Prerequisites

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| Congruent (spherical) hip  
Adequately large weight-bearing surface  
Salter requires CE angle > 5°pre-op | Saucer-shaped acetabulum  
Arthrogram to demonstrate space for the ‘fold’  
Age 6 or younger | Chiari requires sufficient thickness of ilium at level of cut, therefore minimal proximal migration  
Staheli requires stable position while healing |

### Preference

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| First choice  
Second choice  
Third choice (‘salvage’) |  |  |

### Minimal pediatric orthopaedic armamentarium

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| Salter – the easy one  
Ganz or Tonnis – the versatile ones | Pemberton – for severe dysplasia  
Another one – for less severe dysplasia | Staheli – for almost all cases  
Chiari – femoral head cannot be held in stable position |

Bottom line: Know 6 of the 14