

Supplementary Material 1. Current procedural terminology (CPT) and International Classification of Diseases (ICD) codes*Total elbow arthroplasty:***CPT codes:**

- 24361** Arthroplasty, elbow, with distal humeral prosthetic replacement
- 24363** Arthroplasty, elbow, with distal humeral and proximal ulnar prosthetic replacement; total elbow
- 24160** Implant removal, elbow
- 24587** Open treatment of peri-articular fracture with implant

ICD-9 Procedure codes:

- 8184:** Total elbow replacement
- 8009:** Arthrotomy for removal of prosthesis of elbow

ICD-10 Procedure codes:

- 0RRM07Z** Replacement of Left Elbow Joint with Autologous Tissue Substitute, Open Approach
- 0RRM0JZ** Replacement of Left Elbow Joint with Synthetic Substitute, Open Approach
- 0RRLO7Z** Replacement of Right Elbow Joint with Autologous Tissue Substitute, Open Approach
- 0RRLOJZ** Replacement of Right Elbow Joint with Synthetic Substitute, Open Approach
- 0RWWM** Revision of right elbow joint
- 0RWL** Revision of left elbow joint

*Soft-tissue reconstruction:***CPT codes:**

- 14020:** Adjacent tissue transfer or rearrangement, scalp, arms and/or legs.
- 14021:** Adjacent tissue transfer or rearrangement, scalp, arms and/or legs, additional.
- 15100:** Split-thickness autograft, trunk, arms, legs.
- 15101:** Split-thickness autograft, trunk, arms, legs, additional 100sq cm.
- 15110:** Epidermal autograft, trunk, arms, legs.
- 15111:** Epidermal autograft, trunk, arms, legs, additional 100sq cm.
- 15130:** Dermal autograft, trunk, arms, legs.
- 15131:** Dermal autograft, trunk, arms, legs, additional 100sq cm.
- 15271:** Application of skin substitute graft to trunk, arms, legs total wound surface area up to 100sq cm.
- 15272:** Application of skin substitute graft to trunk, arms, legs total wound surface area up to 100sq cm, additional 20sq cm.
- 15273:** Application of skin substitute graft to trunk, arms, legs, 100sq cm.
- 15274:** Application of skin substitute graft to trunk, arms, legs, additional 100sq cm.
- 15572:** Formation of direct or tubed pedicle, with or without transfer; scalp, arms or legs.
- 15610:** Delay of flap or sectioning of flap at scalp, arms or legs.
- 15650:** Transfer, intermediate, of any pedicle flap any location.
- 15736:** Muscle, myocutaneous, or fasciocutaneous flap upper extremity.
- 15740:** Flap; island pedicle requiring identification and dissection of an anatomically named axial vessel.
- 15750:** 15740 with neurovascular pedicle.
- 15756:** Free muscle or myocutaneous with microvascular anastomosis.
- 15757:** Free skin flap with microvascular anastomosis.
- 15758:** Free fascial flap with microvascular anastomosis.
- 15760:** Graft; composite including primary closure, donor area.

ICD-9 Procedure codes:**86.7** Pedicle grafts or flaps

- 86.70 Pedicle or flap graft, not otherwise specified
- 86.71 Cutting and preparation of pedicle grafts or flaps
- 86.72 Advancement of pedicle graft
- 86.73 Attachment of pedicle or flap graft to hand
- 86.74 Attachment of pedicle or flap graft to other sites
- 86.75 Revision of pedicle or flap graft

86.6 Free skin graft

- 86.60 Free skin graft, not otherwise specified
- 86.61 Full-thickness skin graft to hand
- 86.62 Other skin graft to hand
- 86.63 Full-thickness skin graft to other sites
- 86.89 Other repair and reconstruction of skin and subcutaneous tissue

ICD-10 Procedure codes:

- 0XW707** Revision of Autologous Tissue Substitute in Left Upper Extremity, Open Approach
- 0KX80Z** Transfer Left Upper Arm Muscle
- 0KX70** Transfer Right Upper Arm Muscle
- 0KZF0** Transfer Right Trunk Muscle
- 0KZF0Z** Transfer Left Trunk Muscle
- 0KXH0Z** Transfer Right Thorax Muscle
- 0KXH0** Transfer Left Thorax Muscle
- 0KX50Z** Transfer Right Shoulder Muscle
- 0KX50** Transfer Left Shoulder Muscle
- 0KX90Z** Transfer Right Lower Arm and Wrist Muscle
- 0KX90** Transfer Left Lower Arm and Wrist Muscle
- 0HX6XZ** Transfer Back Skin
- 0HX8XZ** Transfer Buttock Skin
- 0HX5XZ** Transfer Chest Skin
- 0HXDXZ** Transfer Right Lower Arm Skin
- 0HXEXZ** Transfer Left Lower Arm Skin
- 0HXCXZ** Transfer Left Upper Arm Skin
- 0HXBXZ** Transfer Right Upper Arm Skin
- 0HXJXZ** Transfer Left Upper Leg Skin
- 0HXHXZ** Transfer Right Upper Leg Skin