



Puzzles for Clinical Orthopaedics Curriculum

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1 Introduction

This document provides a unique puzzle for each of the 45 topics in the Clinical Orthopaedics curriculum, designed to reinforce learning through engaging activities. Each puzzle is tailored to the topic’s objective and outcome, including crosswords, word searches, jumbles, matching games, and cryptograms. Detailed instructions and a visual description for each puzzle are provided, along with a placeholder for an image (as external image insertion is not permitted, a figure caption describes the intended visual). These puzzles are intended for in-class use to enhance student understanding and retention.

2 Puzzles for 45 Topics

2.1 Orthopaedic Terminology

Objective: Understand basic terms. **Outcome:** Define key terms.

Puzzle Type: Crossword

Description: A 5x5 crossword grid with clues for key orthopaedic terms. Clues include: 1. Surgical fusion of a joint (10 letters, across). 2. Bone-cutting procedure (8 letters, down). 3. Joint inflammation (9 letters, across). 4. Joint replacement (11 letters, down).

Instructions: Solve the crossword using the provided clues. Each term relates to orthopaedic terminology. Use a pencil to fill in the grid, ensuring letters align correctly at intersections.

Answer Key: 1. Arthrodesis, 2. Osteotomy, 3. Arthritis, 4. Arthroplasty. **Image**

Description: A 5x5 crossword grid with numbered squares for clues, black squares for separation, and a list of clues below the grid. The grid is partially filled to show correct letter placement.

Figure 1: Crossword grid for Orthopaedic Terminology, showing a 5x5 layout with clues for key terms.

2.2 Types of Pathology

Objective: Learn pathological conditions. **Outcome:** List common pathologies.

Puzzle Type: Word Search

Description: A 10x10 word search grid containing terms like Osteomyelitis, Arthritis, Osteosarcoma, and Scoliosis, hidden horizontally, vertically, and diagonally.

Instructions: Find and circle the listed pathology terms in the grid. Words may overlap and appear in any direction.

Answer Key: Osteomyelitis (diagonal), Arthritis (horizontal), Osteosarcoma (vertical), Scoliosis (diagonal).

Image Description: A 10x10 grid of letters with a list of four pathology terms to find, printed beside the grid. Highlighted words show their locations.

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Figure 2: Word search grid for Types of Pathology, with key terms hidden in a 10x10 layout.

2.3 Clinical Examination

Objective: Perform basic examination. **Outcome:** Demonstrate techniques.

Puzzle Type: Matching Game

Description: Match examination techniques (e.g., Palpation, Goniometry) to their descriptions (e.g., Measuring joint range, Feeling for abnormalities). Includes 5 techniques and 5 descriptions.

Instructions: Draw lines to connect each technique to its correct description. Ensure all pairs are matched accurately.

Answer Key: Palpation–Feeling for abnormalities, Goniometry–Measuring joint range, Inspection–Visual assessment, Percussion–Tapping for resonance, Auscultation– Listening for sounds.

Image Description: Two columns, one listing techniques and the other descriptions, with lines partially drawn to show correct matches.

Figure 3: Matching game for Clinical Examination, pairing techniques with descriptions.

2.4 Common Investigations

Objective: Understand diagnostic tools. **Outcome:** Describe investigation roles.

Puzzle Type: Jumble

Description: Unscramble terms like XRAY, MRI, CTSCAN, and ULTRASOUND to identify diagnostic tools. Each jumbled word has a clue (e.g., "Bone imaging" for XRAY).

Instructions: Unscramble each set of letters using the clue provided to identify the diagnostic tool. Write the correct term next to each clue.

Answer Key: XRAY–X-ray, MRI–MRI, CTSCAN–CT scan,

ULTRASOUND–Ultrasound. **Image Description:** A list of four jumbled words with clues, with spaces for answers and a sample unscrambled term shown.

Figure 4: Jumble puzzle for Common Investigations, showing scrambled diagnostic tool names.

2.5 Non-operative Management

Objective: Learn non-surgical treatments. **Outcome:** Outline strategies.

Puzzle Type: Cryptogram

Description: A coded sentence: “RICE protocol aids recovery” is encrypted using a substitution cipher (e.g., R=A, I=B). Students decode to reveal the message.

Instructions: Decode the cryptogram by substituting letters to uncover the sentence about non-operative management. Use frequency analysis and context clues.

Answer Key: RICE protocol aids recovery.

Image Description: A coded sentence with a substitution cipher key partially revealed, alongside a blank for the decoded message.

Figure 5: Cryptogram for Non-operative Management, showing a coded sentence about RICE protocol.

2.6 Operative Management

Objective: Understand surgical principles. **Outcome:** Describe surgical indications.

Puzzle Type: Crossword

Description: A 6x6 crossword with clues: 1. Surgical bone fixation (7 letters, across). 2. Joint replacement (11 letters, down). 3. Bone cutting (8 letters, across).

Instructions: Fill in the crossword grid using clues related to surgical procedures. Ensure correct letter intersections.

Answer Key: 1. Plating, 2. Arthroplasty, 3. Osteotomy.

Image Description: A 6x6 crossword grid with clues listed below, showing partial completion for guidance.

Figure 6: Crossword for Operative Management, focusing on surgical procedure terms.

2.7 Arthrodesis Indications

Objective: Learn when joint fusion is needed. **Outcome:** List indications.

Puzzle Type: Word Search

Description: A 8x8 grid with terms like Instability, Arthritis, Pain, and Deformity, hidden in various directions.

Instructions: Circle the listed indications for arthrodesis in the grid. Words may be horizontal, vertical, or diagonal.

Answer Key: Instability (vertical), Arthritis (horizontal), Pain (diagonal), Deformity (diagonal).

Image Description: An 8x8 word search grid with a list of arthrodesis indications, some words highlighted.

Figure 7: Word search for Arthrodesis Indications, with key terms hidden in an 8x8 grid.

2.8 Arthroplasty Principles

Objective: Understand joint replacement. **Outcome:** Describe principles.

Puzzle Type: Matching Game

Description: Match terms (e.g., Hip replacement, Knee replacement) to principles (e.g., Restores mobility, Reduces pain). Includes 4 terms and 4 principles.

Instructions: Connect each arthroplasty term to its corresponding principle by drawing lines.

Answer Key: Hip replacement–Restores mobility, Knee replacement–Reduces pain, Shoulder replacement–Improves function, Ankle replacement–Enhances stability.

Image Description: Two columns with terms and principles, with partial lines drawn to show matches.

Matching game for Arthroplasty Principles, pairing procedures with their goals.

2.9 Osteotomy Techniques

Objective: Learn bone-cutting procedures. **Outcome:** Explain purpose.

Puzzle Type: Jumble

Description: Unscramble terms like HIGH, WEDGE, and DOME to identify osteotomy types. Clues include: "Corrects alignment" for HIGH. **Instructions:** Unscramble each term using the clue to identify osteotomy techniques. Write answers in the provided spaces.

Answer Key: HIGH–High tibial, WEDGE–Wedge osteotomy, DOME–Dome osteotomy.

Image Description: A list of three jumbled terms with clues and answer spaces, one term unscrambled as an example.

Figure 8: Jumble puzzle for Osteotomy Techniques, with scrambled osteotomy types.

2.10 Bone Grafting Methods

Objective: Understand grafting techniques. **Outcome:** Describe methods.

Puzzle Type: Cryptogram

Description: Decode the sentence: “Autografts use patient bone” using a substitution cipher.

Instructions: Substitute letters to decode the sentence about bone grafting. Use context and letter frequency to assist.

Answer Key: Autografts use patient bone.

Image Description: A coded sentence with a partial cipher key and a blank for the decoded message.

Figure 9: Cryptogram for Bone Grafting Methods, encoding a sentence about autografts.

2.11 Tendon Transfers

Objective: Learn tendon transfer principles. **Outcome:** Explain concepts.

Puzzle Type: Crossword

Description: A 5x5 crossword with clues: 1. Restores function (6 letters, across). 2. Tendon surgery (8 letters, down).

Instructions: Solve the crossword using clues related to tendon transfers. Ensure correct letter placement.

Answer Key: 1. Tendon, 2. Transfer.

Image Description: A 5x5 crossword grid with clues listed, partially filled to show correct answers.

Figure 10: Crossword for Tendon Transfers, focusing on related terms.

2.12 Sprain Sites

Objective: Identify common sprain locations. **Outcome:** List sites.

Puzzle Type: Word Search

Description: A 10x10 grid with terms like Ankle, Knee, Wrist, and Elbow, hidden in various directions.

Instructions: Find and circle the listed sprain sites in the grid. Words may overlap.

Answer Key: Ankle (horizontal), Knee (vertical), Wrist (diagonal), Elbow (diagonal).

Image Description: A 10x10 word search grid with sprain sites listed, some words highlighted.

Figure 11: Word search for Sprain Sites, with common sprain locations hidden.

2.13 Muscle Strain Symptoms

Objective: Understand strain signs. **Outcome:** Describe presentations.

Puzzle Type: Matching Game

Description: Match symptoms (e.g., Pain, Swelling) to descriptions (e.g., Tenderness on movement, Visible puffiness). Includes 4 symptoms and 4 descriptions.

Instructions: Draw lines to connect symptoms to their descriptions. Ensure accurate pairing.

Answer Key: Pain–Tenderness on movement, Swelling–Visible puffiness, Stiffness–Reduced mobility, Bruising–Discoloration.

Image Description: Two columns with symptoms and descriptions, partial matches shown.

Figure 12: Matching game for Muscle Strain Symptoms, pairing symptoms with descriptions.

2.14 Sprain/Strain Treatment

Objective: Learn management strategies. **Outcome:** Outline protocols.

Puzzle Type: Jumble

Description: Unscramble terms like RICE, REST, and ICE to identify treatments. Clues include: "First aid protocol" for RICE.

Instructions: Unscramble each term using clues to identify treatment methods. Write answers in spaces provided.

Answer Key: RICE–RICE protocol, REST–Rest, ICE–Ice application. **Image**

Description: A list of three jumbled terms with clues and answer spaces, one unscrambled.

Figure 13: Jumble puzzle for Sprain/Strain Treatment, with scrambled treatment terms.

2.15 Fracture Types

Objective: Classify fractures. **Outcome:** Identify types.

Puzzle Type: Crossword

Description: A 6x6 crossword with clues: 1. Fracture through skin (8 letters, across). 2. Partial bone break (11 letters, down). 3. Multiple fragments (10 letters, across).

Instructions: Fill in the grid using fracture type clues. Ensure correct intersections.

Answer Key: 1. Compound, 2. Greenstick, 3. Comminuted.

Image Description: A 6x6 crossword grid with clues, partially filled to show answers.

Figure 14: Crossword for Fracture Types, with clues for different fracture classifications.

2.16 Dislocation vs. Subluxation

Objective: Differentiate terms. **Outcome:** Explain differences.

Puzzle Type: Word Search

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Description: A 8x8 grid with terms like Dislocation, Subluxation, Joint, and Alignment, hidden in various directions.

Instructions: Circle the listed terms in the grid. Words may be in any direction.

Answer Key: Dislocation (horizontal), Subluxation (vertical), Joint (diagonal), Alignment (diagonal).

Image Description: An 8x8 word search grid with terms listed, some highlighted.

Figure 15: Word search for Dislocation vs. Subluxation, with key terms hidden.

2.17 Fracture Signs

Objective: Recognize fracture indicators. **Outcome:** List signs.

Puzzle Type: Matching Game

Description: Match signs (e.g., Deformity, Swelling) to descriptions (e.g., Abnormal bone shape, Tissue fluid buildup). Includes 4 signs and 4 descriptions. **Instructions:**

Connect each sign to its description by drawing lines. **Answer Key:**

Deformity–Abnormal bone shape, Swelling–Tissue fluid buildup, Pain–Tenderness on touch, Crepitus–Grating sound.

Image Description: Two columns with signs and descriptions, partial matches shown.

Figure 16: Matching game for Fracture Signs, pairing signs with descriptions.

2.18 Fracture Management

Objective: Understand treatment approaches. **Outcome:** Describe principles.

Puzzle Type: Cryptogram

Description: Decode: “Immobilization stabilizes fractures” using a substitution cipher.

Instructions: Substitute letters to decode the sentence about fracture management. Use context clues.

Answer Key: Immobilization stabilizes fractures.

Image Description: A coded sentence with a partial cipher key and a blank for the decoded message.

Figure 17: Cryptogram for Fracture Management, encoding a sentence about immobilization.

2.19 Volkmann’s Contracture

Objective: Learn about this complication. **Outcome:** Describe management.

Puzzle Type: Jumble

Description: Unscramble terms like ISCHEMIA, CONTRACTURE, and FOREARM to identify key concepts. Clues include: “Cause of contracture” for ISCHEMIA.

Instructions: Unscramble each term using clues to identify concepts. Write answers in spaces.

Answer Key: ISCHEMIA–Ischemia, CONTRACTURE–Contracture, FOREARM–Forearm.

Image Description: A list of three jumbled terms with clues, one unscrambled.

Figure 18: Jumble puzzle for Volkmann’s Contracture, with scrambled related terms.

2.20 Sudeck’s Atrophy

Objective: Understand this complication. **Outcome:** Explain condition.

Puzzle Type: Crossword

Description: A 5x5 crossword with clues: 1. Also known as CRPS (6 letters, across). 2. Chronic symptom (4 letters, down).

Instructions: Solve the crossword using clues about Sudeck’s atrophy. Ensure correct intersections.

Answer Key: 1. Atrophy, 2. Pain.

Image Description: A 5x5 crossword grid with clues, partially filled. Figure 19:

Crossword for Sudeck's Atrophy, with clues related to CRPS.

2.21 Fracture Healing

Objective: Understand healing process. **Outcome:** Describe stages.

Puzzle Type: Matching Game

Description: Match stages (e.g., Hematoma, Callus) to descriptions (e.g., Blood clot forms, Bone formation). Includes 4 stages and 4 descriptions. **Instructions:** Connect each stage to its description by drawing lines. **Answer Key:** Hematoma–Blood clot forms, Callus–Soft bone forms, Ossification–Hard bone forms, Remodeling–Bone reshapes.

Image Description: Two columns with stages and descriptions, partial matches shown.

Figure 20: Matching game for Fracture Healing, pairing stages with descriptions.

2.22 Upper Limb Fractures

Objective: Learn clinical features. **Outcome:** Describe features.

Puzzle Type: Word Search

Description: A 10x10 grid with terms like Humerus, Radius, Ulna, and Clavicle, hidden in various directions.

Instructions: Circle the listed upper limb bones in the grid. Words may overlap.

Answer Key: Humerus (horizontal), Radius (vertical), Ulna (diagonal), Clavicle (diagonal).

Image Description: A 10x10 word search grid with bone names listed, some highlighted.

Figure 21: Word search for Upper Limb Fractures, with bone names hidden.

2.23 Upper Limb Fracture Management

Objective: Understand treatment. **Outcome:** Outline protocols.

Puzzle Type: Jumble

Description: Unscramble terms like SLING, CAST, and PLATING to identify treatments. Clues include: "Arm support" for SLING.

Instructions: Unscramble each term using clues to identify treatments. Write answers in spaces.

Answer Key: SLING–Sling, CAST–Cast, PLATING–Plating.

Image Description: A list of three jumbled terms with clues, one unscrambled.

Figure 22: Jumble puzzle for Upper Limb Fracture Management, with scrambled treatment terms.

2.24 Lower Limb Fractures

Objective: Learn clinical features. **Outcome:** Describe features.

Puzzle Type: Crossword

Description: A 6x6 crossword with clues: 1. Common lower limb bone (5 letters, across). 2. Thigh bone (5 letters, down). 3. Shin bone fracture (6 letters, across).

Instructions: Solve the crossword using clues about lower limb fractures. Ensure correct intersections.

Answer Key: 1. Tibia, 2. Femur, 3. Fibula.

Image Description: A 6x6 crossword grid with clues, partially filled. Figure 23:

Crossword for Lower Limb Fractures, with clues for bone names.

2.25 Lower Limb Fracture Management

Objective: Understand treatment. **Outcome:** Outline protocols.

Puzzle Type: Cryptogram

Description: Decode: “Casting supports healing” using a substitution cipher.

Instructions: Substitute letters to decode the sentence about fracture management. Use context clues.

Answer Key: Casting supports healing.

Image Description: A coded sentence with a partial cipher key and a blank for the decoded message.

Figure 24: Cryptogram for Lower Limb Fracture Management, encoding a sentence about casting.

2.26 Spinal Fractures

Objective: Learn mechanism and features. **Outcome:** Describe features.

Puzzle Type: Word Search

Description: A 8x8 grid with terms like Vertebra, Compression, Burst, and Paralysis,

hidden in various directions.

Instructions: Circle the listed spinal fracture terms in the grid. Words may overlap.

Answer Key: Vertebra (horizontal), Compression (vertical), Burst (diagonal), Paralysis (diagonal).

Image Description: An 8x8 word search grid with terms listed, some highlighted.

Figure 25: Word search for Spinal Fractures, with key terms hidden.

2.27 Spinal Fracture Management

Objective: Understand treatment. **Outcome:** Outline protocols.

Puzzle Type: Matching Game

Description: Match treatments (e.g., Bracing, Surgery) to descriptions (e.g., Stabilizes spine, Repairs vertebrae). Includes 4 treatments and 4 descriptions. **Instructions:**

Connect each treatment to its description by drawing lines. **Answer Key:**

Bracing–Stabilizes spine, Surgery–Repairs vertebrae, Traction–Aligns spine, Rehab–Restores function.

Image Description: Two columns with treatments and descriptions, partial matches shown.

Figure 26: Matching game for Spinal Fracture Management, pairing treatments with descriptions.

2.28 Shoulder Dislocation

Objective: Learn mechanism. **Outcome:** Describe mechanism.

Puzzle Type: Jumble

Description: Unscramble terms like TRAUMA, JOINT, and REDUCTION to identify concepts. Clues include: “Cause of dislocation” for TRAUMA. **Instructions:**

Unscramble each term using clues to identify concepts. Write answers in spaces.

Answer Key: TRAUMA–Trauma, JOINT–Joint, REDUCTION–Reduction. **Image**

Description: A list of three jumbled terms with clues, one unscrambled.

Figure 27: Jumble puzzle for Shoulder Dislocation, with scrambled related terms.

2.29 Patella Dislocation

Objective: Understand management. **Outcome:** Describe protocols.

Puzzle Type: Crossword

Description: A 5x5 crossword with clues: 1. Knee cap (7 letters, across). 2.

Treatment method (9 letters, down).

Instructions: Solve the crossword using clues about patella dislocation. Ensure correct intersections.

Answer Key: 1. Patella, 2. Reduction.

Image Description: A 5x5 crossword grid with clues, partially filled. Figure 28:

Crossword for Patella Dislocation, with clues for related terms.

2.30 Amputation Classification

Objective: Classify amputations. **Outcome:** List types.

Puzzle Type: Word Search

Description: A 10x10 grid with terms like Aboveknee, Belowknee, Transradial, and Transhumeral, hidden in various directions.

Instructions: Circle the listed amputation types in the grid. Words may overlap.

Answer Key: Aboveknee (horizontal), Belowknee (vertical), Transradial (diagonal), Transhumeral (diagonal).

Image Description: A 10x10 word search grid with amputation types listed, some highlighted.

Figure 29: Word search for Amputation Classification, with amputation types hidden.

2.31 Amputation Indications

Objective: Learn surgical indications. **Outcome:** List indications.

Puzzle Type: Matching Game

Description: Match indications (e.g., Trauma, Infection) to descriptions (e.g., Severe injury, Bacterial spread). Includes 4 indications and 4 descriptions. **Instructions:**

Connect each indication to its description by drawing lines. **Answer Key:**

Trauma–Severe injury, Infection–Bacterial spread, Tumor–Malignant growth, Ischemia–Blood flow loss.

Image Description: Two columns with indications and descriptions, partial matches shown.

Figure 30: Matching game for Amputation Indications, pairing indications with descriptions.

2.32 Prosthetic Management

Objective: Understand prosthetic care. **Outcome:** Describe protocols.

Puzzle Type: Cryptogram

Description: Decode: “Fitting ensures mobility” using a substitution cipher.

Instructions: Substitute letters to decode the sentence about prosthetic care. Use context clues.

Answer Key: Fitting ensures mobility.

Image Description: A coded sentence with a partial cipher key and a blank for the decoded message.

Figure 31: Cryptogram for Prosthetic Management, encoding a sentence about fitting.

2.33 Amputation Complications

Objective: Learn complications. **Outcome:** Describe management.

Puzzle Type: Jumble

Description: Unscramble terms like PHANTOM, INFECTION, and NEUROMA to identify complications. Clues include: “Post-amputation pain” for PHANTOM.

Instructions: Unscramble each term using clues to identify complications. Write answers in spaces.

Answer Key: PHANTOM–Phantom pain, INFECTION–Infection, NEUROMA–Neuroma.

Image Description: A list of three jumbled terms with clues, one unscrambled.

Figure 32: Jumble puzzle for Amputation Complications, with scrambled complication terms.

2.34 Septic Arthritis

Objective: Understand etiology. **Outcome:** Describe features.

Puzzle Type: Crossword

Description: A 5x5 crossword with clues: 1. Cause of septic arthritis (9 letters, across). 2. Common symptom (4 letters, down).

Instructions: Solve the crossword using clues about septic arthritis. Ensure correct intersections.

Answer Key: 1. Infection, 2. Pain.

Image Description: A 5x5 crossword grid with clues, partially filled. Figure 33:

Crossword for Septic Arthritis, with clues for related terms.

2.35 Osteomyelitis

Objective: Learn management. **Outcome:** Outline protocols.

Puzzle Type: Word Search

Description: A 10x10 grid with terms like Antibiotics, Surgery, Bone, and Infection, hidden in various directions.

Instructions: Circle the listed osteomyelitis terms in the grid. Words may overlap.

Answer Key: Antibiotics (horizontal), Surgery (vertical), Bone (diagonal), Infection (diagonal).

Image Description: A 10x10 word search grid with terms listed, some highlighted.

Figure 34: Word search for Osteomyelitis, with key terms hidden.

2.36 TB Spine

Objective: Understand features and management. **Outcome:** Describe protocols.

Puzzle Type: Matching Game

Description: Match terms (e.g., Mycobacterium, Bracing) to descriptions (e.g., Causative bacteria, Stabilizes spine). Includes 4 terms and 4 descriptions. **Instructions:** Connect each term to its description by drawing lines. **Answer Key:** Mycobacterium–Causative bacteria, Bracing–Stabilizes spine, Antibiotics–Treats infection, Rehab–Restores function.

Image Description: Two columns with terms and descriptions, partial matches SNS

Figure 35: Matching game for TB Spine, pairing terms with descriptions.

2.37 Bone Tumor Classification

Objective: Classify tumors. **Outcome:** List types.

Puzzle Type: Crossword

Description: A 6x6 crossword with clues: 1. Malignant bone tumor (11 letters, across). 2. Benign tumor (9 letters, down).

Instructions: Solve the crossword using clues about bone tumors. Ensure correct intersections.

Answer Key: 1. Osteosarcoma, 2. Osteoma.

Image Description: A 6x6 crossword grid with clues, partially filled. Figure 36:

Crossword for Bone Tumor Classification, with clues for tumor types.

2.38 Osteosarcoma

Objective: Learn features and management. **Outcome:** Describe protocols.

Puzzle Type: Jumble

Description: Unscramble terms like CHEMOTHERAPY, SURGERY, and TUMOR to identify concepts. Clues include: “Cancer treatment” for CHEMOTHERAPY.

Instructions: Unscramble each term using clues to identify concepts. Write answers in spaces.

Answer Key: CHEMOTHERAPY–Chemotherapy, SURGERY–Surgery, TUMOR–Tumor.

Image Description: A list of three jumbled terms with clues, one unscrambled.

Figure 37: Jumble puzzle for Osteosarcoma, with scrambled related terms.

2.39 Rheumatoid Arthritis

Objective: Understand pathology. **Outcome:** Describe deformities.

Puzzle Type: Word Search

Description: A 10x10 grid with terms like Autoimmune, Deformity, Joint, and Swelling, hidden in various directions.

Instructions: Circle the listed rheumatoid arthritis terms in the grid. Words may overlap.

Answer Key: Autoimmune (horizontal), Deformity (vertical), Joint (diagonal), Swelling (diagonal).

Image Description: A 10x10 word search grid with terms listed, some highlighted.

Figure 38: Word search for Rheumatoid Arthritis, with key terms hidden.

2.40 Osteoarthritis

Objective: Learn management. **Outcome:** Outline protocols.

Puzzle Type: Cryptogram

Description: Decode: “Exercise reduces pain” using a substitution cipher.

Instructions: Substitute letters to decode the sentence about osteoarthritis management. Use context clues.

Answer Key: Exercise reduces pain.

Image Description: A coded sentence with a partial cipher key and a blank for the decoded message.

Figure 39: Cryptogram for Osteoarthritis, encoding a sentence about exercise.

2.41 Ankylosing Spondylitis

Objective: Understand features. **Outcome:** Describe features.

Puzzle Type: Crossword

Description: A 5x5 crossword with clues: 1. Affected area (5 letters, across). 2. Common symptom (8 letters, down).

Instructions: Solve the crossword using clues about ankylosing spondylitis. Ensure correct intersections.

Answer Key: 1. Spine, 2. Stiffness.

Image Description: A 5x5 crossword grid with clues, partially filled. Figure 40:

Crossword for Ankylosing Spondylitis, with clues for related terms.

2.42 Low Back Ache

Objective: Learn causes and management. **Outcome:** Describe protocols.

Puzzle Type: Matching Game

Description: Match causes (e.g., Herniated disc, Muscle strain) to treatments (e.g., Physical therapy, Rest). Includes 4 causes and 4 treatments. **Instructions:** Connect each cause to its treatment by drawing lines. **Answer Key:** Herniated disc–Physical therapy, Muscle strain–Rest, Scoliosis–Bracing, Arthritis–Medication.

Image Description: Two columns with causes and treatments, partial matches shown.

Figure 41: Matching game for Low Back Ache, pairing causes with treatments.

2.43 Spinal Deformities

Objective: Classify deformities. **Outcome:** List types.

Puzzle Type: Word Search

Description: A 10x10 grid with terms like Scoliosis, Kyphosis, Lordosis, and Deformity, hidden in various directions.

Instructions: Circle the listed deformity types in the grid. Words may overlap.

Answer Key: Scoliosis (horizontal), Kyphosis (vertical), Lordosis (diagonal), Deformity (diagonal).

Image Description: A 10x10 word search grid with deformity types listed, some highlighted.

Figure 42: Word search for Spinal Deformities, with deformity types hidden.

2.44 Poliomyelitis

Objective: Understand residual problems. **Outcome:** Describe orthoses.

Puzzle Type: Jumble

Description: Unscramble terms like ORTHOSES, BRACE, and POLIO to identify concepts. Clues include: “Support device” for ORTHOSES.

Instructions: Unscramble each term using clues to identify concepts. Write answers in spaces.

Answer Key: ORTHOSES–Orthoses, BRACE–Brace, POLIO–Polio. **Image**

Description: A list of three jumbled terms with clues, one unscrambled.

Figure 43: Jumble puzzle for Poliomyelitis, with scrambled related terms.

2.45 Clubfoot Management

Objective: Understand treatment. **Outcome:** Describe Ponseti method.

Puzzle Type: Crossword

Description: A 5x5 crossword with clues: 1. Clubfoot treatment (7 letters, across). 2. Key technique (7 letters, down).

Instructions: Solve the crossword using clues about clubfoot management. Ensure correct intersections.

Answer Key: 1. Ponseti, 2. Casting.

Image Description: A 5x5 crossword grid with clues, partially filled.

Figure 44: Crossword for Clubfoot Management, with clues for Ponseti method terms.