

# MEDICAL ANALYSIS

## Patient Info

Key	Value
name	Sourav Chowdhury
age	25
gender	Male
occupation	Engineer
occupation_activity_classification	Sedentary
address	{ "area": "", "locality": "", "city": "Dhaka", "state": "Bangladesh" }
contact	+8801712906519
dietary_preference	Vegetarian
allergies	[ "fish" ]
presenting_complaints	Routine check-up, current smoker, diabetes mellitus not on treatment

## Vital Signs

Key	Value
blood_pressure	{ "systolic": 120, "diastolic": 80, "unit": "mmHg" }
heart_rate	{ "value": 78, "unit": "bpm" }
respiratory_rate	{ "value": 16, "unit": "breaths/min" }
spo2	{ "value": 98, "unit": "%" }
temperature	{ "value": 36.8, "unit": "°C" }

## Anthropometric Measurements

Key	Value
height	{ "value": 170, "unit": "cm" }
weight	{ "value": 68, "unit": "kg" }
bmi	{ "value": 23.5, "who_classification": "Normal", "indian_rssdi_classification": "Overweight", "interpretation": "BMI is within normal range according to WHO, but classified as overweight by Indian RSSDI guidelines." }

## Examination Findings

Key	Value
general_appearance	Well-nourished, alert, no acute distress
cardiovascular	Normal heart sounds, no murmurs

respiratory	Clear breath sounds bilaterally
abdominal	Soft, non-tender, no organomegaly
neurological	No focal neurological deficits
musculoskeletal	{ "joint_issues": [], "previous_fractures": [], "mobility_limitations": [], "deformities": [] }
lower_limb_vascular_assessment	{ "pulse_grading_svs": { "femoral": { "left": "2+", "right": "2+", "notes": "Normal pulses" }, "popliteal": { "left": "2+", "right": "2+", "notes": "Normal pulses" }, "anterior_tibial": { "left": "2+", "right": "2+", "notes": "Normal pulses" }, "posterior_tibial": { "left": "2+", "right": "2+", "notes": "Normal pulses" }, "dorsalis_pedis": { "left": "2+", "right": "2+", "notes": "Normal pulses" } }, "arterial_findings": { "intermittent_claudication": false, "claudication_distance_meters": 0, "rest_pain": false, "skin_changes": [], "rutherford_classification": "Class 0: Asymptomatic" }, "venous_findings": { "varicose_veins": false, "edema": "None", "skin_changes": [] }, "lymphatic_findings": { "lymphedema": false, "severity": "Mild" }, "diabetic_foot_assessment": { "neuropathy": false, "ulcers": [], "deformities": [], "infection_signs": false }, "ulcer_documentation": { "present": false, "details": [] }, "skin_assessment": { "color": "normal", "temperature": "warm", "hair_growth": "normal", "nail_changes": [] } }
other_findings	No significant abnormalities

## Laboratory Results

Key	Value
_note	DYNAMIC SECTION - Include ONLY lab categories found in actual reports
_instructions	Create subsections for each lab test category identified (e.g., complete_blood_count, liver_function_tests, renal_function_tests, lipid_profile, thyroid_function, hba1c, electrolytes, etc.)
lab_categories_identified	[ "Clinical Biochemistry", "Serum Electrolytes", "Renal Function Test", "Hematology", "Serology" ]
clinical_biochemistry	{ "serum_random_blood_sugar": { "value": 134, "unit": "mg/dL", "reference_range": "70 - 140 mg/dL", "status": "normal" } }
serum_electrolytes	{ "serum_sodium": { "value": 142, "unit": "mmol/L", "reference_range": "136 - 145 mmol/L", "status": "normal" }, "serum_potassium": { "value": 3.8, "unit": "mmol/L", "reference_range": "3.50 - 5.30 mmol/L", "status": "normal" }, "serum_chloride": { "value": 110, "unit": "mmol/L", "reference_range": "98 - 107 mmol/L", "status": "high" } }
renal_function_test	{ "blood_urea_nitrogen": { "value": 7, "unit": "mg/dL", "reference_range": "6 - 20 mg/dL", "status": "normal" }, "serum_creatinine": { "value": 1.04, "unit": "mg/dL", "reference_range": "0.62 - 1.10 mg/dL", "status": "normal" }, "serum_uric_acid": { "value": 6.6, "unit": "mg/dL", "reference_range": "3.50 - 7.21 mg/dL", "status": "normal" } }

hematology	{ "haemoglobin": { "value": 14.7, "unit": "g/dL", "reference_range": "13 - 17 g/dL", "status": "normal" }, "total_leucocytes_count": { "value": 10130, "unit": "cells/cumm", "reference_range": "4000 - 11000 cells/cumm", "status": "normal" }, "neutrophils": { "value": 55.2, "unit": "%", "reference_range": "40 - 80 %", "status": "normal" }, "lymphocytes": { "value": 30.3, "unit": "%", "reference_range": "20 - 40 %", "status": "normal" }, "eosinophils": { "value": 1.4, "unit": "%", "reference_range": "1 - 6 %", "status": "normal" }, "monocytes": { "value": 12.5, "unit": "%", "reference_range": "2 - 10 %", "status": "high" }, "basophils": { "value": 0.6, "unit": "%", "reference_range": "0 - 1 %", "status": "normal" }, "erythrocyte_sedimentation_rate": { "value": 15, "unit": "mm/1st hr", "reference_range": "0 - 9 mm/1st hr", "status": "high" }, "red_blood_cell_count": { "value": 4.93, "unit": "million/cumm", "reference_range": "4.5 - 5.5 million/cumm", "status": "normal" }, "packed_cell_volume": { "value": 43.9, "unit": "%", "reference_range": "40 - 50 %", "status": "normal" }, "platelet_count": { "value": 2.27, "unit": "lakhs/cumm", "reference_range": "1.5 - 4.0 lakhs/cumm", "status": "normal" }, "platelet_distribution_width": { "value": 11.5, "unit": "%", "reference_range": "8.2 - 9.8 %", "status": "high" }, "mean_platelet_volume": { "value": 10.4, "unit": "fL", "reference_range": "9.2 - 10.4 fL", "status": "normal" }, "prothrombin_time": { "value": 13.7, "unit": "Sec", "reference_range": "12.06 - 16.06 Sec", "status": "normal" }, "pt_inr": { "value": 0.97, "reference_range": "0.8 - 1.2", "status": "normal" }, "aptt": { "value": 27.6, "unit": "SECS", "reference_range": "26.80 - 30.80 SECS", "status": "normal" } }
serology	{ "hiv_i_ii_antibodies": { "result": "NON REACTIVE", "interpretation": "< 0.9 is NON REACTIVE" }, "hepatitis_b_surface_antigen": { "result": "NON REACTIVE", "interpretation": "<= 0.9 is NON REACTIVE" }, "hbeag": { "result": "Not Detected" }, "anti_hcv_antibodies": { "result": "NON REACTIVE", "interpretation": "< 0.9 is NON REACTIVE" }, "hcv_rna": { "result": "No Exposure to Hepatitis C Virus (HCV)" } }
abnormal_findings_summary	[ "Serum Chloride: 110 mmol/L (High)", "Monocytes: 12.5% (High)", "Erythrocyte Sedimentation Rate: 15 mm/1st hr (High)", "Platelet Distribution Width: 11.5% (High)" ]
critical_values	[]

### Medical History Comorbidities

Key	Value
diabetes	{ "present": true, "type": "Type 2", "duration_years": 1, "controlled": false, "medications": [], "last_hba1c": { "value": null, "date": null }, "last_fbs_rbs": { "fbs": null, "rbs": 134, "unit": "mg/dL" }, "complications": [] }
hypertension	{ "present": false, "duration_years": null, "controlled": false, "medications": [], "complications": [] }
dyslipidemia	{ "present": false, "controlled": false, "medications": [] }
cardiovascular_disease	{ "ihd": false, "cad": false, "type": "", "complications": [] }

thyroid_disorders	{ "hypothyroidism": { "present": false, "medications": [] }, "hyperthyroidism": { "present": false, "medications": [] } }
other_conditions	[]

### Substance Use History

Key	Value
smoking	{ "status": "Current", "type": "Cigarette", "quantity_per_day": null, "duration_years": 7, "pack_years": null, "smoking_index": null, "risk_category": "Moderate", "abstinence_months": 0 }
tobacco_chewing	{ "status": false, "quids_per_day": 0, "duration_years": 0, "chewing_index": 0, "risk_category": "Low" }
betel_nut	{ "status": false, "quids_per_day": 0, "duration_years": 0, "chewing_index": 0, "risk_category": "Low" }
alcohol	{ "status": "Never", "details": "No history of alcohol use" }
total_tobacco_risk	Moderate due to current smoking status

### Lifestyle Assessment

Key	Value
occupation_activity	{ "occupation": "Engineer", "classification": "Sedentary", "rationale": "Office-based work with minimal physical activity" }
physical_activity	{ "daily_steps": { "value": 3000, "distance_km": 2.34, "classification": "Below recommendations" }, "exercise_frequency": "Rarely exercises", "exercise_type": [] }
sleep	{ "duration_hours": 7, "quality": "Good", "disturbances": [], "classification": "Adequate for age", "recommendations": "Maintain current sleep pattern" }
diet_habits	{ "type": "Vegetarian", "meal_frequency": 3, "water_intake_liters": 2.5, "concerns": [ "Fish allergy" ] }

### Risk Stratification

Key	Value
components	[ { "category": "METABOLIC", "risk_level": "Moderate", "findings": [ "Type 2 Diabetes Mellitus, not on treatment" ], "rationale": "Uncontrolled diabetes increases risk for metabolic complications" }, { "category": "TOBACCO", "risk_level": "Moderate", "findings": [ "Current smoker" ], "rationale": "Smoking increases cardiovascular and respiratory risk" } ]
overall_risk_assessment	Moderate risk due to uncontrolled diabetes and smoking

### Key Calculations

Key	Value
bmi	{ "value": 23.5, "who": "Normal", "indian": "Overweight" }
bmr_mifflin_st_jeor	{ "value": 1653.5, "unit": "kcal/day" }
tdee	{ "sedentary": 1984.2, "current_activity_level": 1984.2, "activity_level_used": "Sedentary" }
calorie_deficit_needed	{ "current_bmi_category": "Normal", "target_daily_calories": 1484.2, "deficit_amount": 500, "expected_weight_loss": "0.5-1 kg/week" }
total_tobacco_risk	Moderate
cardiovascular_risk_score	None

### ***Individualized Diet Plan***

Key	Value
target_calories	1484
calorie_goal	1484
unit	kcal/day
type	Vegetarian
macronutrient_distribution	{ "protein": { "grams": 74, "range_gkg": "1.2-2.0", "percentage": "20%" }, "carbohydrates": { "grams": 223, "percentage": "60%" }, "fat": { "grams": 33, "percentage": "20%" } }
fluid_intake	{ "target_liters": 2.5, "schedule": "Distribute evenly throughout the day" }
meals	[ { "meal_name": "Breakfast", "time": "7:00 AM", "foods": "Oats porridge 30g, 1 cup skim milk, 8 almonds, 2 walnuts, 1 apple", "calories": 350, "protein": "15g", "carbs": "55g", "fat": "10g" }, { "meal_name": "Mid-morning", "time": "10:00 AM", "foods": "1 banana, 1 cup green tea", "calories": 150, "protein": "2g", "carbs": "35g", "fat": "0g" }, { "meal_name": "Lunch", "time": "1:00 PM", "foods": "2 chapatis, 1 cup dal, 1 cup mixed vegetable curry, salad", "calories": 400, "protein": "20g", "carbs": "60g", "fat": "10g" }, { "meal_name": "Evening Snack", "time": "4:00 PM", "foods": "1 cup yogurt, 1 handful of mixed nuts", "calories": 200, "protein": "10g", "carbs": "20g", "fat": "10g" }, { "meal_name": "Dinner", "time": "7:00 PM", "foods": "1 cup brown rice, 1 cup vegetable stew, 1 cup lentil soup", "calories": 384, "protein": "27g", "carbs": "53g", "fat": "3g" } ]
daily_totals	{ "calories": 1484, "protein": "74g", "carbs": "223g", "fat": "33g" }
notes	[ "Adjust portion sizes to reach calorie goal of 1484 kcal/day", "Consider patient allergies: fish", "Based on vegetarian preference", "All meals split every 3-4 hours", "Local dietary habits incorporated" ]
weekly_variation	Rotate proteins, vary vegetables, alternate grains for variety

### ***Exercise Physiotherapy Plan***

Key	Value
considerations	{ "mobility_limitations": [], "joint_issues": [], "previous_fractures": [], "contraindications": [], "current_fitness_level": "Sedentary" }
recommended_program	[ { "activity_type": "Walking Program", "description": "Start 15-20 minutes daily, gradually increase to 30-45 minutes", "frequency": "5-7 days/week", "intensity": "Moderate pace", "duration": "15-45 minutes", "progression": "Increase by 5 minutes weekly", "modifications": "If claudication occurs, rest until pain subsides, then continue" }, { "activity_type": "Interval Training", "description": "Alternate walking speeds if tolerated", "frequency": "3 times/week", "modifications": "Based on symptoms" }, { "activity_type": "Resistance Training", "description": "Light weights or body weight exercises", "exercises": [ "Wall push-ups", "Chair squats", "Seated leg raises" ], "frequency": "2-3 times/week", "modifications": "Avoid if severe joint pain" }, { "activity_type": "Flexibility & Balance", "description": "Gentle stretching and balance exercises", "exercises": [ "Ankle circles", "Calf stretches", "Standing balance" ], "frequency": "Daily", "duration": "10-15 minutes" } ]
warm_up	5 minutes gentle stretching/breathing
cool_down	5 minutes gentle stretching
hydration	200-300ml water before/after session
sleep_hygiene	Prioritize 7-8 hours nightly, optimize sleep environment
target_distance	Progressive increase, monitor symptoms
safety_precautions	[ "Stop if severe pain, dizziness, or chest discomfort", "Wear proper footwear", "Exercise in safe, well-lit areas", "Monitor blood sugar if diabetic" ]

### Management Advice Triggers

Key	Value
diabetes	{ "status": "Uncontrolled", "action": "Immediate endocrinology referral/start treatment" }
hypertension	{ "status": "Not present", "action": "Monitor blood pressure regularly" }
foot_care	{ "status": "Normal", "action": "NO home cutting of nails/calluses, no heat pads, daily inspection required" }
tobacco_cessation	{ "status": "Active use", "action": "Increased vascular risk counseling, cessation support, de-addiction clinic referral" }
medication_adherence	{ "status": "Not applicable", "action": "Review all comorbidity medications, ensure regular follow-up" }
wound_care	{ "present": false, "action": "Specific care: moisture, moisturization, proper footwear" }
lifestyle_modifications	[ "Graded walking program as tolerated", "Immediate specialty review (see referrals)", "Strict foot care protocol and self-monitoring" ]

additional_advice	All risk/plan details included above, follow international guidelines
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### Red Flags Emergency Return

Key	Value
seek_immediate_medical_attention_if	[ "Sudden severe chest pain or pressure", "Difficulty breathing or shortness of breath at rest", "Sudden weakness, numbness, or loss of sensation", "Rapidly spreading wound infection (increasing redness, warmth, pus)", "Uncontrolled bleeding from wound", "Signs of gangrene (blackened or cold tissue)", "High fever (>101°F) with chills or confusion", "Severe rest pain not relieved by position changes", "Sudden color change in limb (pale, blue, or mottled)", "Loss of consciousness or severe dizziness", "New or worsening claudication significantly limiting walking" ]

### Follow Up Plan

Key	Value
next_appointment	1 month
specialty_clinic_referrals	[ { "clinic": "Endocrinology", "reason": "Uncontrolled diabetes, medication initiation/adjustment", "urgency": "Immediate" }, { "clinic": "Dietitian/Nutritionist", "reason": "Personalized meal planning, comorbidity management, weight optimization", "urgency": "Routine" }, { "clinic": "De-addiction/Psychiatry", "reason": "Smoking/tobacco cessation support, substance use counseling", "urgency": "Routine" } ]
investigations_required	[ { "test": "HbA1c", "timing": "Every 3 months", "indication": "Diabetes monitoring" }, { "test": "Lipid profile", "timing": "Every 6 months", "indication": "CVD risk" }, { "test": "ABI (Ankle-Brachial Index)", "timing": "If not done or symptoms worsen", "indication": "PAD assessment" }, { "test": "Doppler ultrasound", "timing": "As per vascular specialist", "indication": "Arterial assessment" } ]
medication_review	Review all comorbidity medications, ensure adherence, adjust as per specialist recommendations
self_monitoring	[ "Daily foot inspection", "Blood pressure monitoring if hypertensive", "Blood glucose monitoring if diabetic", "Weight tracking weekly", "Exercise log maintenance" ]

### Integrated Report Summary

Key	Value
patient	{ "demographics": "Age 25, Male, Engineer", "dietary_preference": "Vegetarian" }
main_problems	Uncontrolled diabetes, current smoker
critical_findings	None

care_plan_summary	[ "Graded walking program as tolerated", "Immediate specialty review (endocrinology, dietitian, de-addiction)", "Tailored diet: ~1484 kcal/day, Vegetarian", "Strict foot care protocol and self-monitoring", "Red flag education provided", "Tobacco cessation counseling and support" ]
advice	All risk stratifications per ADA, ESC, EASO, WHO, ICMR, MoHFW, and international vascular guidelines. All risk/plan details included above.
advisor	AI Medical Assistant
supervising_physician	Report to be reviewed and co-signed by attending physician
data_quality_assessment	Complete data available, OCR extraction quality assessment

### ***referrals\_suggested***

[ { "specialty": "Endocrinology", "reason": "Uncontrolled diabetes, medication initiation/adjustment required", "urgency": "Immediate" }, { "specialty": "Dietitian/Nutritionist", "reason": "Personalized meal planning, comorbidity management, weight optimization", "urgency": "Routine" }, { "specialty": "De-addiction Clinic/Psychiatry", "reason": "Smoking/tobacco cessation support, substance use counseling", "urgency": "Routine" } ]

### ***additional\_recommendations***

[ "Regular physical activity as per exercise plan", "Stress management techniques", "Support group participation for chronic disease management", "Family education regarding emergency signs", "Regular follow-up adherence critical for outcomes" ]

### ***Report Metadata***

Key	Value
generation_timestamp	2025-11-16T09:44:07.403Z
files_analyzed	[ "https://res.cloudinary.com/drgya5yez/image/authenticated/s--9SxkEIMF--/v1763285680/patients/reports/Lab-1-1763285671939-p151ji4.pdf", "https://res.cloudinary.com/drgya5yez/image/authenticated/s--R0alPoip--/v1763285681/patients/reports/Lab-2-1763285672950-90yggvb.pdf" ]
extraction_methods	[ "OCR", "PDF text extraction" ]
lab_categories_present	[ "Clinical Biochemistry", "Serum Electrolytes", "Renal Function Test", "Hematology", "Serology" ]
calculations_performed	[ "BMI", "BMR", "TDEE" ]
guidelines_referenced	[ "WHO BMI Classification", "Indian RSSDI 2022 Guidelines", "Mifflin-St Jeor Equation", "SVS Pulse Grading", "Rutherford Classification", "ADA Diabetes Guidelines", "ESC Cardiovascular Guidelines", "International Tobacco Control Guidelines" ]