

Tissue Troubles - Diagnose, Discover, Design

? Questionnaire

 **Q1. What is your age group?**

- ☐ a) Below 14
- ☐ b) 15–30
- ☐ c) 31–50
- ☐ d) 60+

 **Q2. Do you experience regular pain or stiffness in joints, muscles, or nerves?**

- ☐ Yes
- ☐ No

 **Q3. On average, how many hours do you spend sitting each day?**

- ☐ Less than 2 hours
- ☐ 2–5 hours
- ☐ 6–8 hours
- ☐ More than 8 hours

 **Q4. How often do you exercise per week?**

- ☐ Never

- ☐ 1–2 days
- ☐ 3–5 days
- ☐ Daily

 **Q5. Have you ever had muscle cramps, back pain, or joint swelling?**

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often

 **Q6. How do you relieve tissue discomfort (if any)?**

- ☐ Medication
- ☐ Stretching
- ☐ Physiotherapy
- ☐ Home remedies
- ☐ I don't take any treatment

 **Q7. Do you follow a diet rich in proteins, calcium, or vitamins?**

- ☐ Yes
- ☐ No
- ☐ Not sure

 **Q8. Any injuries or tissue-related issues in the past 6 months?**

- Your answer here



Survey Responses Table

Name	Age Group	Pain/Stiffness	Sitting (hrs/day)	Exercise/wk	Symptoms	Relief Method	Healthy Diet	Recent Injury
Aarav	Below 14	No	2–5 hrs	Daily	None	Not applicable	Yes	No
Meera	Below 14	Yes	6–8 hrs	1–2 days	Muscle cramps	Stretching	No	Twisted ankle during P.E.
Arjun	15–30	Yes	6–8 hrs	3–5 days	Back pain	Physiotherapy	Yes	Strain from gym workout
Riya	15–30	No	2–5 hrs	3–5 days	None	Not applicable	Yes	No
Tanish	15–30	Yes	More than 8 hrs	Never	Neck stiffness	Medication	No	None
Radhika	31–50	Yes	More than 8 hrs	1–2 days	Joint swelling	Home remedies	No	Occasional wrist pain
Neeraj	31–50	Yes	6–8 hrs	3–5 days	Lower back pain	Stretching	Yes	No
Priya	31–50	No	2–5 hrs	Daily	None	Not applicable	Yes	No
Dinesh	60+	Yes	2–5 hrs	1–2 days	Knee joint pain	Medication	No	Old injury flaring up
Sushma	60+	Yes	Less than 2 hrs	Rarely	Joint stiffness	Home remedies	Yes	Slipped and bruised elbow
Kishore	60+	Yes	6–8 hrs	Never	Chronic knee swelling	Physiotherapy	No	Ongoing arthritis treatment
Reena	60+	No	2–5 hrs	3–5 days	None	Not applicable	Yes	No



Data Analysis — Trends & Insights



Key Observations:

- **Most Affected Age Group:**
60+ years showed the **highest reports of tissue-related discomfort** like joint stiffness and chronic swelling.
- **Habits Causing Issues:**
 - Long sitting hours (6–8 hrs or more) correlate with back and neck pain.
 - **Lack of exercise** (Never or 1–2 days/week) is common among those reporting discomfort.
 - Poor diet awareness is linked to more cases of joint/muscle pain.
- **Common Relief Methods Used:**
 - **Younger groups (Below 30):** Prefer stretching, physiotherapy, or no treatment at all.
 - **Older groups (31+):** Rely more on **medication** and **home remedies**.
 - **Physiotherapy** is popular for those with chronic conditions or gym injuries.



Tissue Discomfort by Age Group

Age Group	Total People	People with Discomfort	% Affected
Below 14	2	1	50%
15–30	3	2	66.7%
31–50	3	2	66.7%
60+	4	3	75%

Summary by Age Group

Below 14

- **Common Issues:** Minor cramps, occasional sports injury.
- **Habits:** Active lifestyle but increasing screen time.
- **Relief:** Stretching or no treatment.

Age 15–30

- **Common Issues:** Gym-related strains, back/neck pain due to screen time.
- **Habits:** Sedentary study/work life, variable exercise.
- **Relief:** Physiotherapy, stretching, some medication.

Age 31–50

- **Common Issues:** Joint pain, lower back pain.
- **Habits:** Sedentary jobs, occasional physical activity.
- **Relief:** Home remedies and basic stretching.

Age 60+

- **Common Issues:** Chronic joint stiffness, arthritis, limited mobility.
- **Habits:** Low physical activity, often unaware of dietary needs.
- **Relief:** Medication and physiotherapy, traditional remedies.

Quick Insights Table

Cause	Most Affected Age Group	Notes
Long sitting hours	15–50	Linked to back/neck pain
Lack of exercise	31+	Seen in chronic joint stiffness
Poor diet	All (esp. 60+)	Correlates with tissue weakness
Physiotherapy usage	15–60	Helps in muscle/joint recovery
No action taken	Below 14, some 15–30	Often ignore minor pains

Research to Deepen My Understanding

Tissues Affected & Their Functions

Tissue Type	Structure	Function
Muscle	Long, fibrous cells (skeletal, smooth, cardiac)	Enables body movement, posture, heartbeat, and digestion
Cartilage	Semi-rigid connective tissue, smooth surface	Cushions joints, supports bones, absorbs shock
Nerve	Neurons with axons/dendrites	Transmits electrical signals across the body
Connective	Includes ligaments, tendons, adipose tissue	Binds, supports, protects organs, stores energy

Impact of Lifestyle Habits on Tissues

Habit	Tissue Affected	Consequences
Lack of Exercise	Muscle, Cartilage	Weakness, stiffness, muscle atrophy, joint wear
Poor Posture	Muscle, Nerve	Strain, nerve pinching, back/neck pain
Overuse (gym/phone)	Muscle, Nerve	Cramps, tendinitis, carpal tunnel, nerve fatigue
Poor Nutrition	All	Weak tissue regeneration, increased inflammation
Ageing (no activity)	Cartilage, Nerve	Joint degeneration, slower nerve signal transmission

Suggestions for Prevention & Care

Muscle Tissue

- **Exercise:** Include stretching, resistance training
- **Rest:** Allow recovery after strain
- **Nutrition:** Protein-rich diet (eggs, lentils, nuts)

Cartilage

- **Hydration:** Keeps joints lubricated
- **Movement:** Low-impact exercises (yoga, walking)
- **Supplements:** Calcium, Vitamin D, Omega-3

✓ Nerve Tissue

- **Posture Correction:** Use ergonomic chairs/desks
- **Mindfulness:** Reduce screen stress, take breaks
- **B Vitamins:** Essential for nerve repair (found in dairy, whole grains)

🌱 Sustainable Tissue Care Tips

- 🚶 Walk or cycle instead of using motor transport daily (lowers joint load).
- 🥬 Eat more whole, plant-based foods to support long-term tissue health.
- 🧘 Integrate 10–15 mins of yoga/stretching into your daily routine.
- 📵 Take hourly breaks from screens to relax muscles and nerves.

💡 *Pro Tip:* Prevention > Cure. Lifestyle is medicine when you use it right.


🔧 Identify a Problem & Design a Solution

🧩 Identified Problem Overview

- **Tissue Type Affected:** Cartilage
- **Main Problem Observed:** Early-onset joint stiffness and knee pain in adults aged 31–50
- **What causes this problem?**
 - Sedentary work lifestyle (prolonged sitting)
 - Skipping stretching and warm-ups before exercise
 - Poor intake of calcium and vitamin D
 - Being overweight, which puts stress on joints
 - Neglect of low-impact physical activities

Link to Sustainability

Our lifestyle tip poster promotes **daily habits** that are simple, natural, and **low-resource** — no expensive treatments or medications needed. By encouraging **regular movement, hydration, and natural nutrition**, it reduces long-term healthcare costs and reliance on synthetic drugs.

|  Small daily choices → Long-lasting tissue health → A more sustainable, self-aware society.

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