Test Report Validation

1. Running Tests

- Commands for basic, watch, coverage, and CI modes are clearly listed and correctly mapped to `package.json` scripts.
- Coverage generation includes **terminal**, **HTML**, **LCOV**, and **JSON** formats—complete.

2. Test Coverage

- Coverage metrics are well defined:
    - **Statements**: `% of executed code lines`
    - **Branches**: `% of conditional paths`
    - **Functions**: `% of functions called`
    - **Lines**: `% of lines executed`
- Suggestion: You could also mention **thresholds** in `jest.config.js` to automatically fail tests if coverage drops below target.

3. Test Structure

Folder structure is consistent:

`lib/__tests__/`
`app/api/auth/__tests__/`

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- Mapping test files to modules (`auth.ts`, API routes) is clear.

4. Current Test Coverage

- Authentication utilities are well covered (~62–66%).
- API routes are **in progress**—requires Next.js `Request/Response` polyfill or `next-test-api-route-handler`.
- Suggestion: Add **mocking instructions** for `NextApiRequest`/`NextApiResponse` to make API route tests executable in Jest.

5. Adding New Tests

- Guidelines are correct: `.test.ts/.spec.ts`, placed in `__tests__`, use Jest/RTL, run via `npm test`.

6. Example Test Output

- Provided output is realistic and formatted well.
- Includes **pass/fail counts, time, snapshots**, which is helpful for CI.

7. Coverage Goals

- Explicit numeric targets:
    - 80% overall
    - 90% critical paths
    - 70% UI components
- This is clear and actionable.

8. Continuous Integration

- CI command explained properly.

- Highlights behavior: **no watch mode**, **coverage generation**, **worker limits**, **fail on test failure**.

Suggested Improvements:

1. **Add threshold enforcement in Jest config**:

```
coverageThreshold: {
  global: {
    branches: 80,
    functions: 80,
    lines: 80,
    statements: 80
  }
}
```

2. **API Route Testing**: Provide example for mocking `NextApiRequest/Response`.
3. **Optional**: Add badges in README for:
    - Test coverage
    - Build status