Hand & Brain Chess

User Manual

Single-file web app for the Hand & Brain chess variant
Stockfish · opening book · characters · voice · scoresheet

File: **handbrain.html**

Open in Chrome, Edge, Firefox, or Safari

Manual updated to match the current app

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1. Introduction

Hand & Brain Chess is a complete browser game in one file, **handbrain.html**. No install and no server are required. You play the Hand & Brain variant with human and/or AI partners (Sarah, Elena, Mei), backed by Stockfish when available, plus an opening book for variety, spoken piece announcements, optional voice input, character portraits, move sounds, and a classical-style scoresheet.

2. What is Hand & Brain Chess?

Each side is split into two roles:

- **Brain** — names only the *type* of piece that must move (King, Queen, Rook, Bishop, Knight, or Pawn).
- **Hand** — chooses a *legal move* with a piece of that type.

Castling counts as a King move. Pawn promotion defaults to a queen. The Brain never specifies the destination; the Hand never chooses a different piece type.

Example: Brain says "Knight." Hand may play any legal knight move (Nf3, Nc3, …), not a bishop move.

3. Getting Started

1. Open **handbrain.html** in a modern browser.
2. Check or change Brain/Hand assignments for White and Black (defaults are randomized).
3. Optionally set think time, sound, voice recognition, and the debug panel.
4. Press **Start Game**. First Stockfish load may take from seconds to a few minutes (download + WASM).
5. Play. Portraits and the scoresheet show who is acting and what was played.

4. The Start Screen

4.1 Roles and random assignment

Each colour has Brain and Hand dropdowns. On every page load the four slots are filled with a **random permutation** of You, Sarah, Elena, and Mei. Changing a dropdown updates the portrait underneath at once.

4.2 Characters

Character	Description
You	Human player — mouse (and optional voice) for Brain piece choice and Hand moves.
Sarah / Elena / Mei	AI characters. Moves come from Stockfish (or the opening book). Each has her own portraits and voice profile.

4.3 Sound and voice

- **Voice announcements** (default on) — AI Brain speaks the piece type with a distinct female voice per character.
- **Voice recognition** (default off) — when you are Brain, you may say a piece name instead of tapping a button.
- A short board sound plays whenever a piece is moved on the board.

4.4 Engine think time

Dropdown from 1–10 seconds; **default 5 s**. Used for Stockfish search time and also as the display time for the thinking portrait when a move is taken from the opening book (no real search).

4.5 Engine debug panel

Checkbox **Show engine debug panel** (default **off**). When on, the game screen shows Stockfish load and search logs (uciok, readyok, GO, depth, bestmove). Use only for diagnosing engine issues.

5. Playing a Game

5.1 Board and orientation

The board uses Lichess-style pieces and colours. It flips so your side is at the bottom when you must act. The last move is highlighted. There is no empty “idle” flash between an AI move and the next AI think.

5.2 You as Brain

Your portrait appears at the same height as other thinking images, to the left of buttons for every piece type that still has a legal move. Tap one (or say the name if recognition is on).

5.3 You as Hand

The Brain’s choice is shown (speaking portrait when the Brain was AI, plus piece figurine). Select a piece of that type, then a highlighted destination.

5.4 AI as Brain or Hand

- **AI Brain** — thinking portrait only (no piece list). After search (or book), speaking portrait + piece for 2 seconds, with optional voice.
- **AI Hand** — thinking portrait + selected piece while calculating; then move portrait + move notation (e.g. ■f3) for 2 seconds; then the move is played with a board sound.

5.5 Portrait sequence

Phase	Portrait
AI Brain searching / book delay	Thinking photo
AI Brain announcement	Speaking photo + piece (2 s)
AI Hand searching / book delay	Hand’s thinking photo + called piece
AI Hand about to play	Move photo + SAN of the move (2 s)
You as Brain	You portrait + piece buttons

6. Opening Book

A built-in book of common lines (Ruy Lopez, Italian, Sicilian, French, Caro-Kann, Queen’s Gambit, King’s Indian, English, and others) increases variety. While the position is still in book, the AI picks randomly among legal book moves instead of always the same engine line.

Book moves need no engine search, but the **thinking portrait still shows for the full engine think time** so the experience stays consistent. After the book line ends, Stockfish takes over.

7. Stockfish Engine

Stockfish.js is loaded from a CDN into a Web Worker (standard chess only, even on multi-variant builds). The engine panel (if enabled) reports download, handshake, and search progress.

- **Brain** — unrestricted search; the piece type of the best move is announced. That best move is remembered for Hand when possible.
- **Hand** — UCI *searchmoves* limits Stockfish to legal moves of the called piece type.
- If Stockfish is unavailable, a weak built-in search is used and the UI states that clearly.

8. Scoresheet

The scoresheet sits under the board controls:

- Centered title **Hand & Brain** with date and time.
- Two centered columns: White and Black, each with ■ Brain name and ■ Hand name (no AI-engine line).
- Table columns: move number, Brain call (figurine), White move (hand symbol header), Brain call, Black move (hand symbol header).
- Figurine algebraic notation; updates after every completed move.

9. End of Game

On **checkmate** or **resignation**, the losing side's AI character(s) are shown with their **lose** portraits. The result text (e.g. "Checkmate — White wins" or "Resignation — Black wins") appears **to the right of** the portrait(s). Draw shows a simple draw message.

10. In-Game Controls

Control	Effect
Resign	Ends the game; the side to move loses; lose portraits for AI on that side.
New Game	Starts a new game flow from the current session (reload the page for a fresh random role deal if desired).
Sound toggle (when shown)	Turns spoken piece announcements on/off during play.

Where supported, the Wake Lock API tries to keep the screen on during a game.

11. Tips and Troubleshooting

Stockfish not loaded

- Enable the engine debug panel, start again, and read the last log lines.
- Allow network access to the CDN (jsdelivr / cdnjs / unpkg).
- First load can take minutes on a slow connection.

Weak or repetitive play

- Increase engine think time (8–10 s).
- Confirm the UI shows Stockfish, not built-in AI.
- Opening book only covers the early game; later moves are pure engine.

Voice recognition

- Best on Chrome/Edge with a clear mic; piece buttons always work as a fallback.

12. Technical Notes

One HTML file embeds CSS, JavaScript, and character images. Rules use chess.js; the engine is Stockfish.js in a Worker; speech uses the Web Speech API. Move sounds are synthesized with the Web Audio API. No game data is uploaded by the app; only public CDN requests for the engine.

End of manual — enjoy Hand & Brain Chess.