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Health & Nutrition Sciences

BEST PRACTICE REFERENCE GUIDE

Responsible AI: From Insight to Impact

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This handout accompanies the webinar *The Emerging Role of Artificial Intelligence in Nutrition: From Insight to Impact*

AI is advancing rapidly across every sector. Used thoughtfully, it can improve efficiency, assist with decisions, and suggest new perspectives. Used without care, it introduces risk to data, to people, and to trust. This guide outlines the **core principles, practical steps, and warning signs** everyone should know before using an AI tool.

Three core principles:

Verify the evidence
Know your data
Communicate with stakeholders

Verify.

Seek credible, independent evidence for any AI tool before adoption. Ask who tested it, on what data, and with what results.

Know.

Establish and/or follow clear policies on data use, consent, access, and accountability before deploying any AI system.

Communicate.

Be transparent with stakeholders about when and how you are using AI tools, including its limitations and the human oversight in place.

Using generative AI

Verify the output. LLMs can produce confident-sounding but incorrect information. Always cross-check important outputs against authoritative sources before acting on them.

Keep sensitive data out. Assume anything you type into a public LLM could be stored or used for training. Never input personal, confidential, or commercially sensitive information unless you are certain of the platform's data policies.

Be the expert in the room. Use LLMs to assist your thinking, not replace it. The model should not be accountable for the outcome: that's on you. Apply your own judgement to everything it produces.

Watch for bias. LLMs reflect the data they were trained on, which carries real-world biases. Be particularly critical of outputs that relate to people, groups, and communities, or decisions that could affect others unfairly.

Thinking about using AI tools?

- **Start small:** identify one specific task where AI could add value and pilot it in a low-risk context before scaling.
- **Define the problem first:** AI works best when the challenge is clearly scoped. Avoid deploying AI in search of a problem to solve. Only turn to AI if there is a solid use case for it.
- **Involve end users early:** the people who will use or be affected by an AI system should be part of its design and evaluation.

How AI tools can be useful

- Automating repetitive tasks.
- Synthesising large volumes of data to surface insights faster.
- Personalising communications, recommendations, or outputs at scale.
- Supporting research, literature review, and hypothesis generation (via specific AI research tools, e.g., Consensus).
- Flagging anomalies, risks, or trends that humans might miss.
- Improving accessibility through translation, captioning, and adaptive tools.

Responsible Use Checklist

Before adopting any AI tool:

- ✓ **Evidence:** Is there independent validation of the tool's performance? By whom?
- ✓ **Transparency:** Can the tool explain how it reaches its outputs? Avoid opaque "black box" systems where accountability matters.
- ✓ **Bias & fairness:** Was the training data representative? Could the outputs disadvantage particular groups?
- ✓ **Data governance:** Who owns the data? Where is it stored, processed, and for how long? Is consent in place?
- ✓ **Human oversight:** Is there a clear process for human review of AI outputs before action is taken?
- ✓ **Monitoring:** Is there a plan to regularly review the tool's outputs for errors, or unintended consequences?
- ✓ **Scope discipline:** Use AI only within its validated scope. Don't extrapolate outputs beyond what the evidence supports.
- ✓ **Exit strategy:** What is the plan if the tool underperforms, is discontinued, or needs to be changed?

Red Flags: pause before adopting a tool if you see:

- ▶ No independent peer-reviewed validation. Vendor claims alone are not sufficient evidence.
- ▶ Opaque data practices. Is it unclear who owns, processes, or can monetise your data?
- ▶ No disclosure of limitations, failure modes, or known biases in documentation.
- ▶ Conflicts of interest. Is this a tool developed or funded solely by a party that profits directly from its use?
- ▶ Overclaiming capabilities. Are outputs presented as definitive when the tool was trained for something narrower?
- ▶ No audit trail. Beware an inability to document what the AI contributed to a decision or recommendation.