

Can our diet affect the outcome of immune checkpoint inhibition?

Prof. Dr. Sandrine Aspeslagh

17th May 2025

bmuc.be/bmuc2025



12th Belgian Multidisciplinary Meeting on Urological Cancers

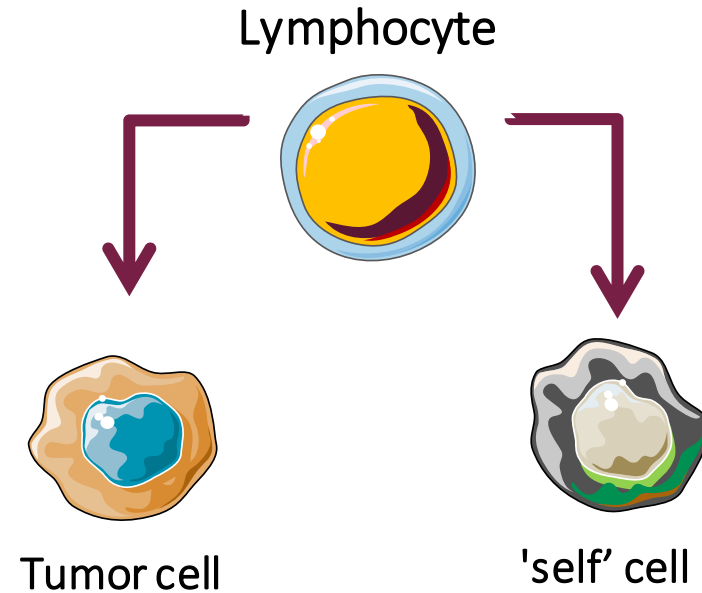
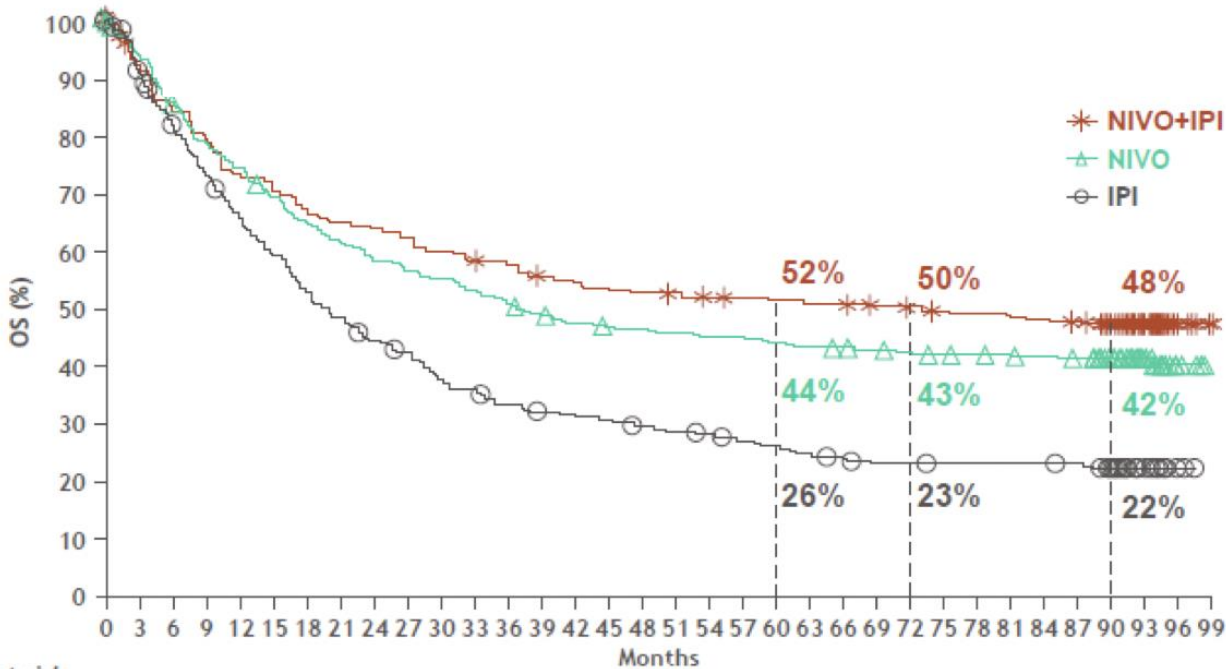
Conflicts of interest

- I have the following potential conflict(s) of interest to report

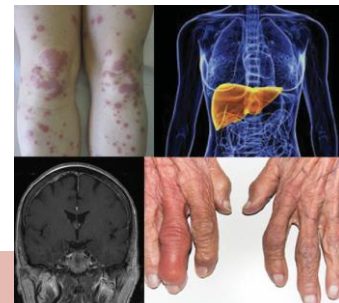
Type of affiliation / financial interest	Name of commercial company
Receipt of grants/research supports:	Octapharma
Receipt of consultation fees for advisory boards (to institution):	MSD, Sanofi, Roche, BMS, Pfizer, Ipsen, Galapagos, Astra Zeneca, Lilly
Participation in a company sponsored speaker's bureau:	none
Stock shareholder:	none
Spouse/partner:	none
Other support (please specify):	none

IMMUNE CHECKPOINT INHIBITION FOR CANCER: very DURABLE RESPONSES

Price to pay:
immune related adverse events (irAE)

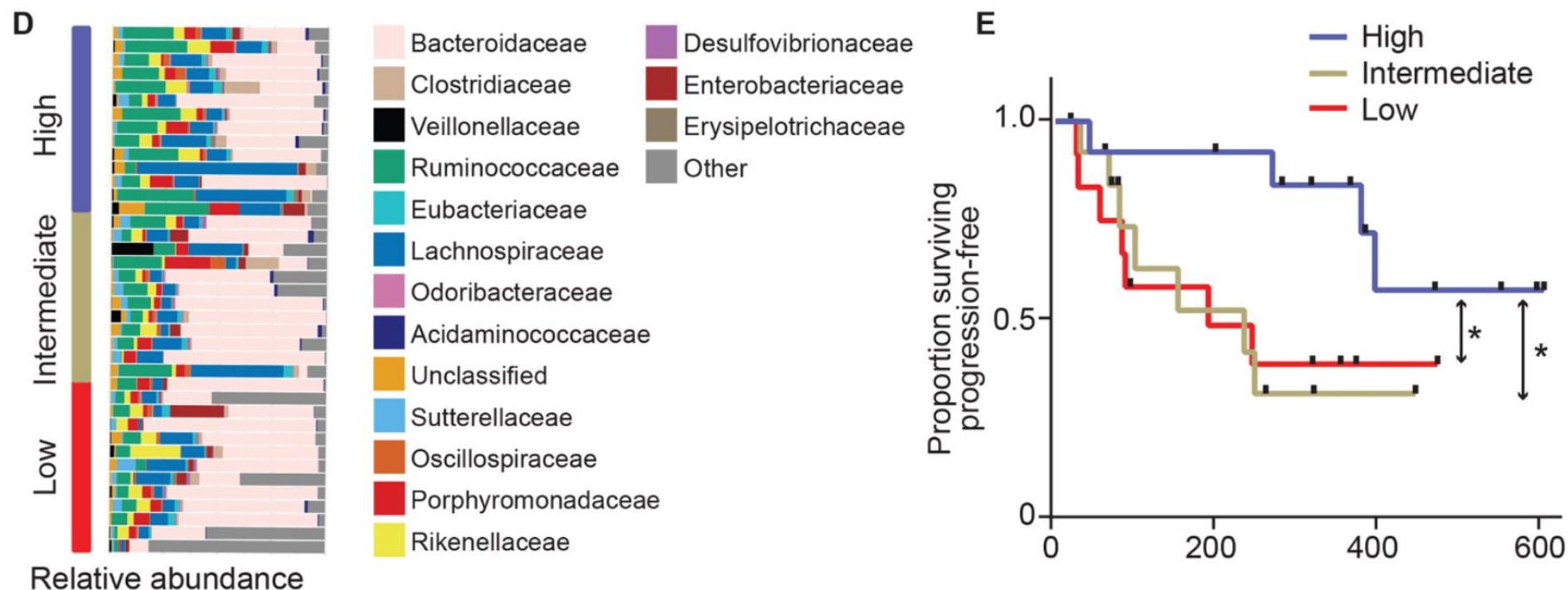


IDEAL SITUATION:
TUMOR CONTROL & NO TOX

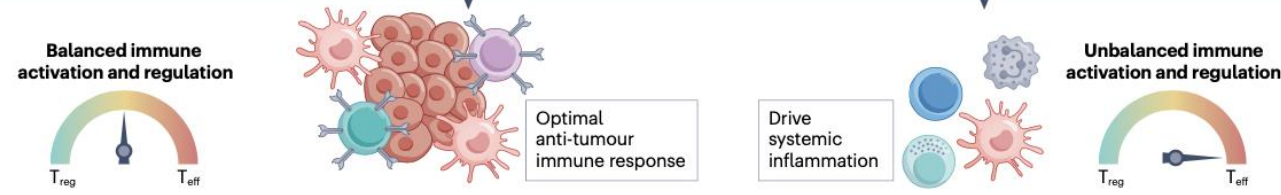
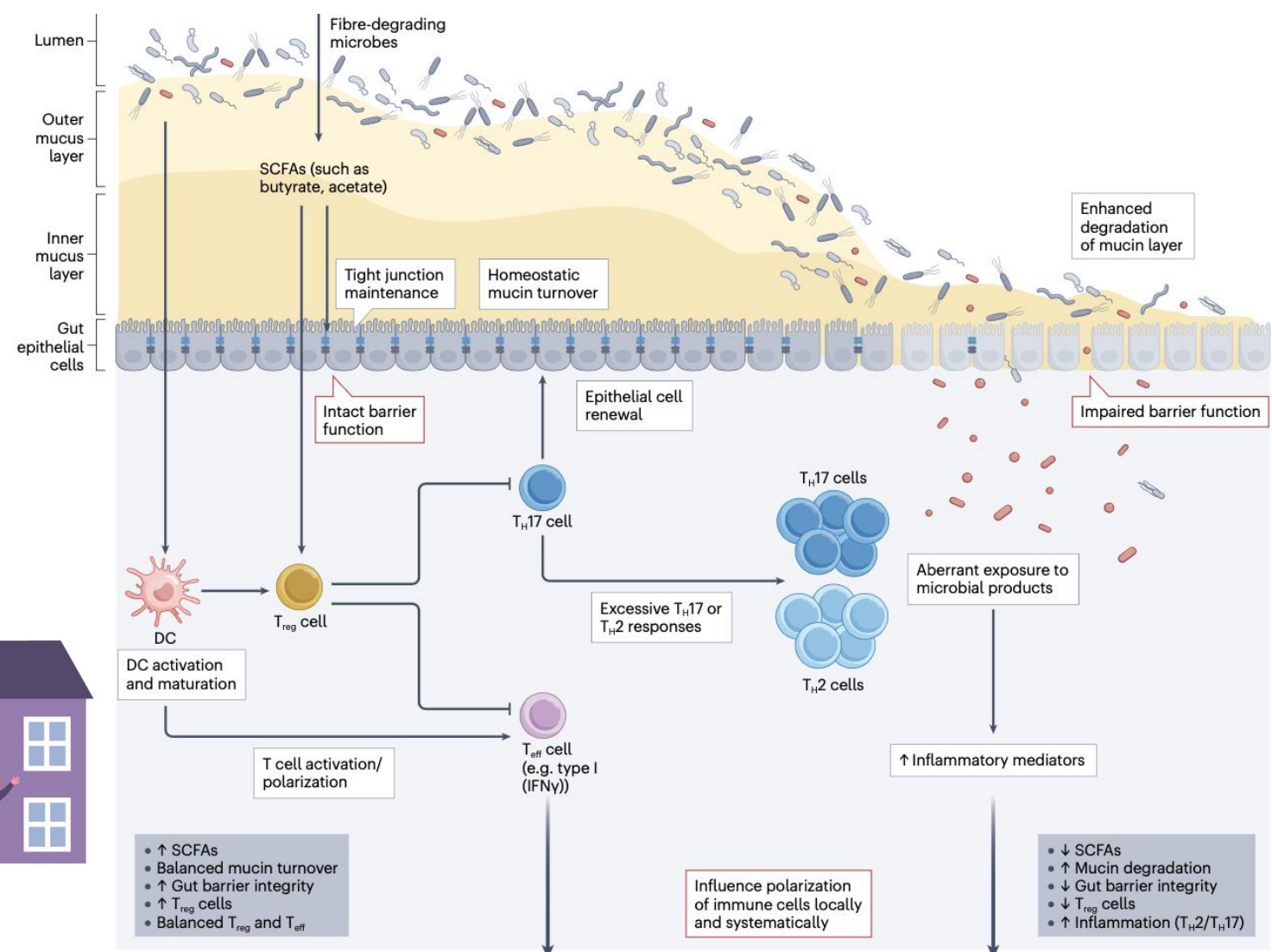


Gut microbiome modulates response to anti-PD-1 immunotherapy in melanoma patients

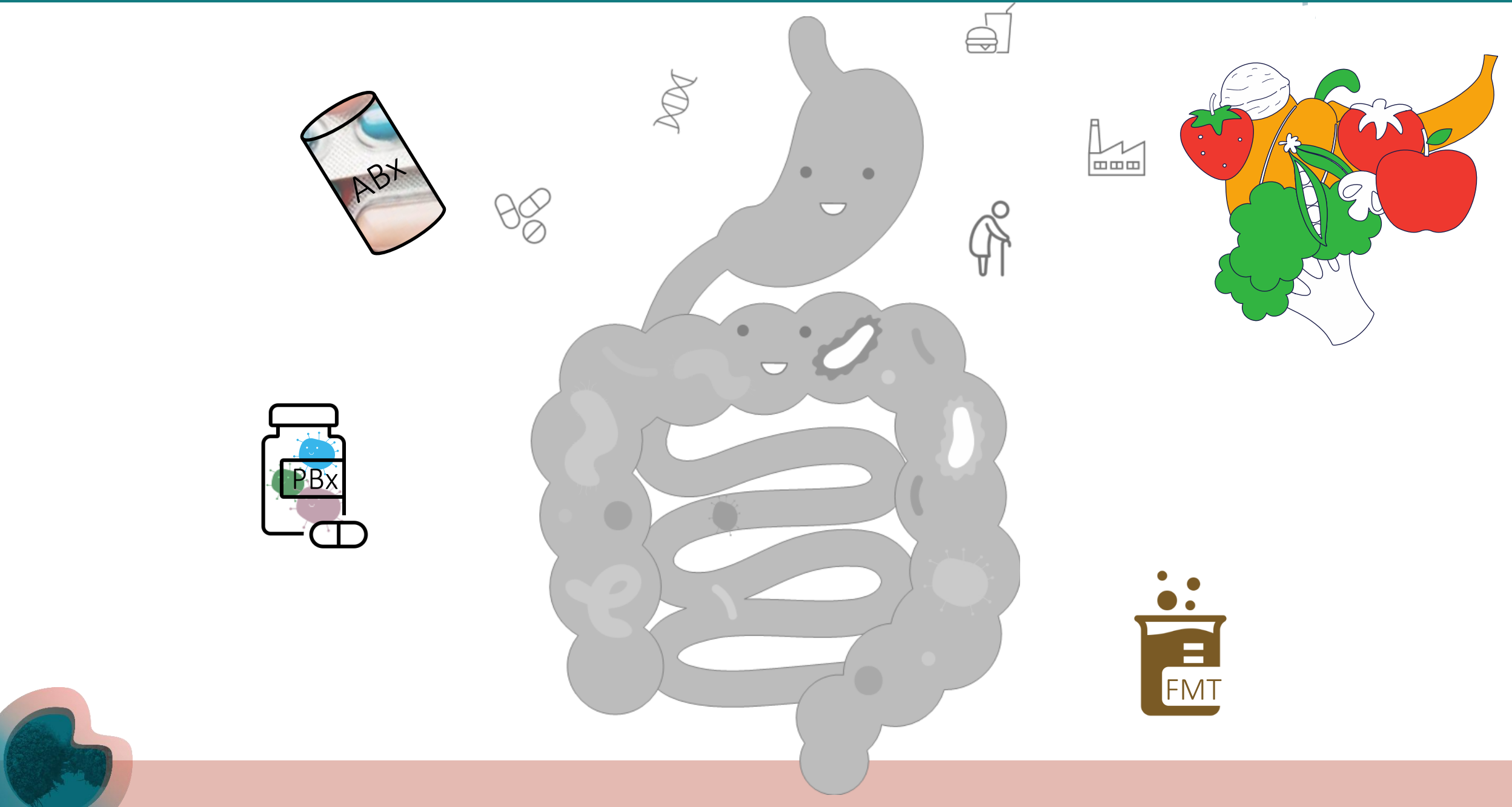
V. Gopalakrishnan,^{1,2*} C. N. Spencer,^{2,3*} L. Nezi,^{3*} A. Reuben,¹ M. C. Andrews,¹ T. V. Karpinets,³ P. A. Prieto,^{1†} D. Vicente,¹ K. Hoffman,⁴ S. C. Wei,⁵ A. P. Cogdill,^{1,5} L. Zhao,³ C. W. Hudgens,⁶ D. S. Hutchinson,⁷ T. Manzo,³ M. Petaccia de Macedo,^{6‡} T. Cotechini,⁸ T. Kumar,³ W. S. Chen,⁹ S. M. Reddy,¹⁰ R. Szczepaniak Sloane,¹ J. Galloway-Pena,¹¹ H. Jiang,¹ P. L. Chen,^{9§} E. J. Shpall,¹² K. Rezvani,¹² A. M. Alousi,¹² R. F. Chemaly,¹¹ S. Shelburne,^{3,11} L. M. Vence,⁵ P. C. Okhuysen,¹¹ V. B. Jensen,¹³ A. G. Swennes,⁷ F. McAllister,¹⁴ E. Marcelo Riquelme Sanchez,¹⁴ Y. Zhang,¹⁴ E. Le Chatelier,¹⁵ L. Zitvogel,¹⁶ N. Pons,¹⁵ J. L. Austin-Breneman,^{1||} L. E. Haydu,¹ E. M. Burton,¹ J. M. Gardner,¹ E. Sirmans,¹⁷ J. Hu,¹⁸ A. J. Lazar,^{6,9} T. Tsujikawa,⁸ A. Diab,¹⁷ H. Tawbi,¹⁷ I. C. Glitza,¹⁷ W. J. Hwu,¹⁷ S. P. Patel,¹⁷ S. E. Woodman,¹⁷ R. N. Amaria,¹⁷ M. A. Davies,¹⁷ J. E. Gershenwald,¹ P. Hwu,¹⁷ J. E. Lee,¹ J. Zhang,³ L. M. Coussens,⁸ Z. A. Cooper,^{1,3¶} P. A. Futreal,³ C. R. Daniel,^{4,2} N. J. Ajami,⁷ J. F. Petrosino,⁷ M. T. Tetzlaff^{6,9} P. Sharma,^{5,19} J. P. Allison,⁵ R. R. Jenq,^{3#} J. A. Wargo,^{1,3#**}



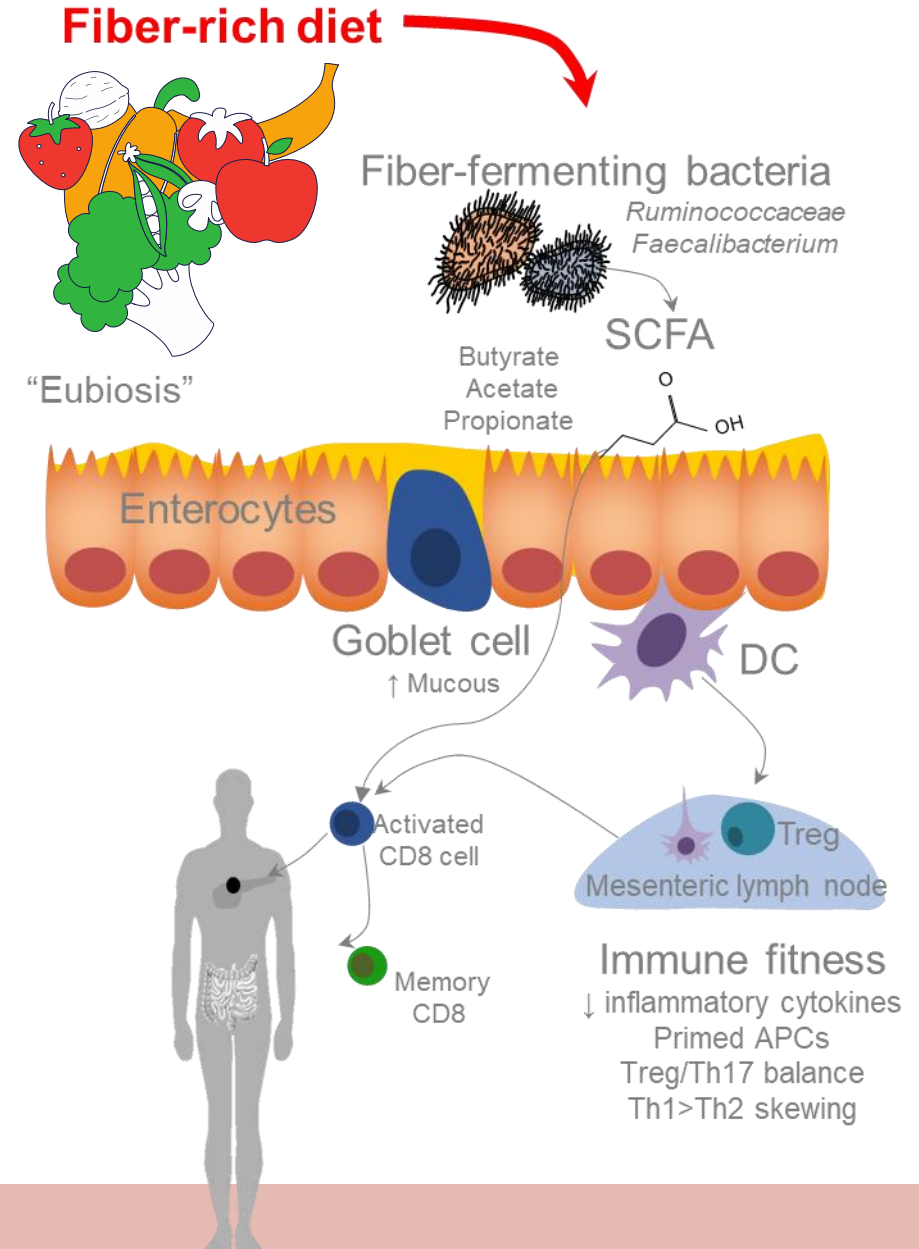
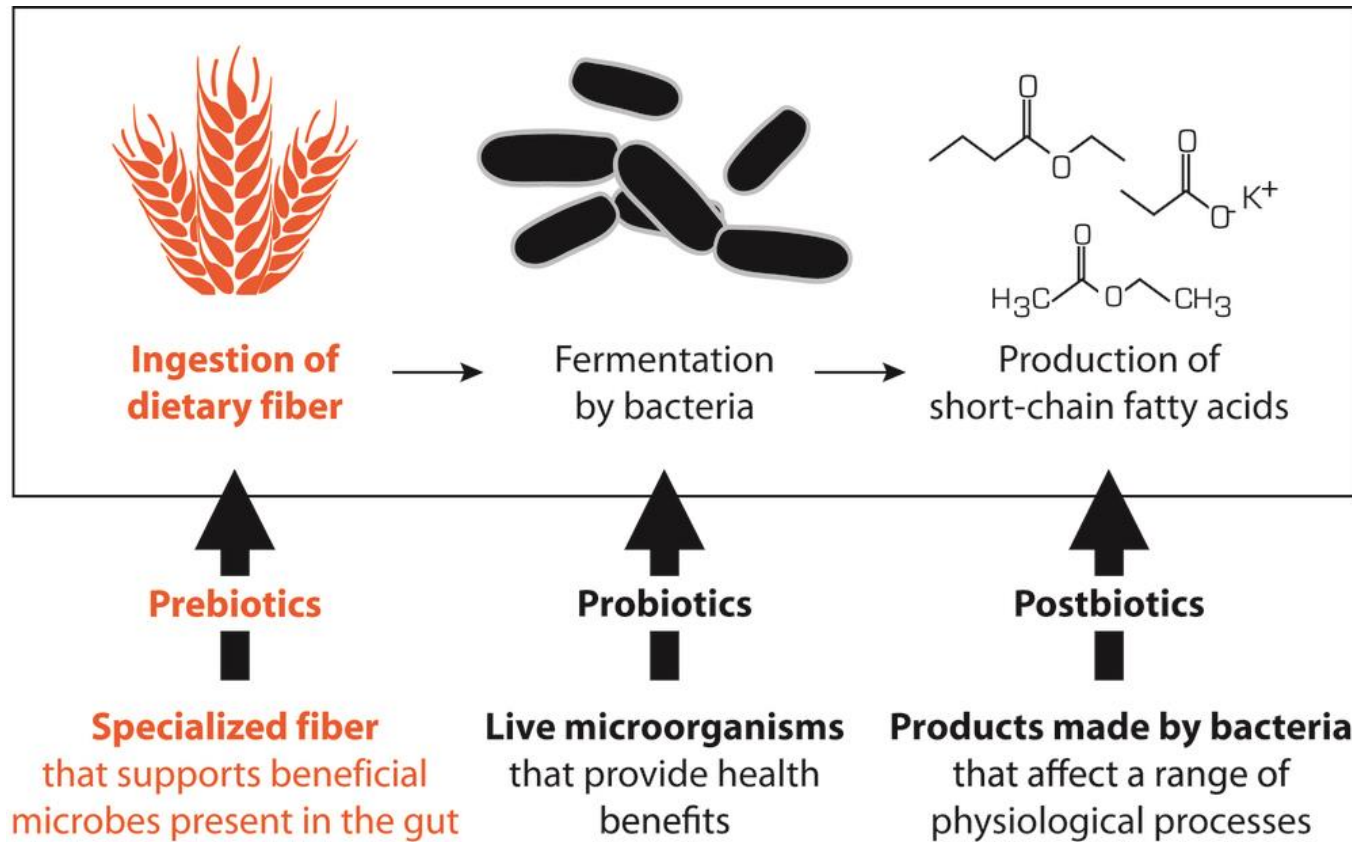
Gut – Diet- Immunesystem



Can we influence the microbiome?



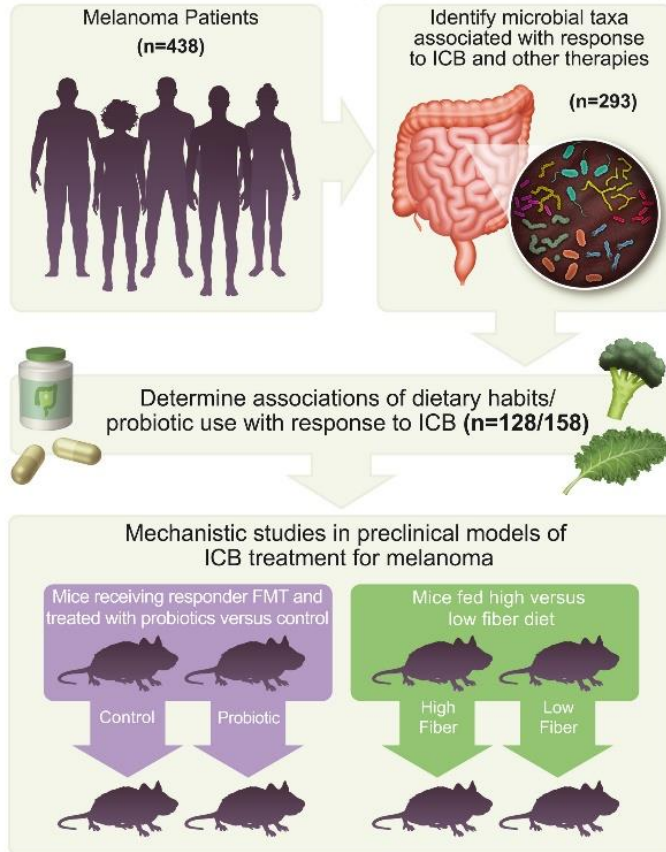
Diet - fiber, short chain fatty acids (SCFAs) & immunity



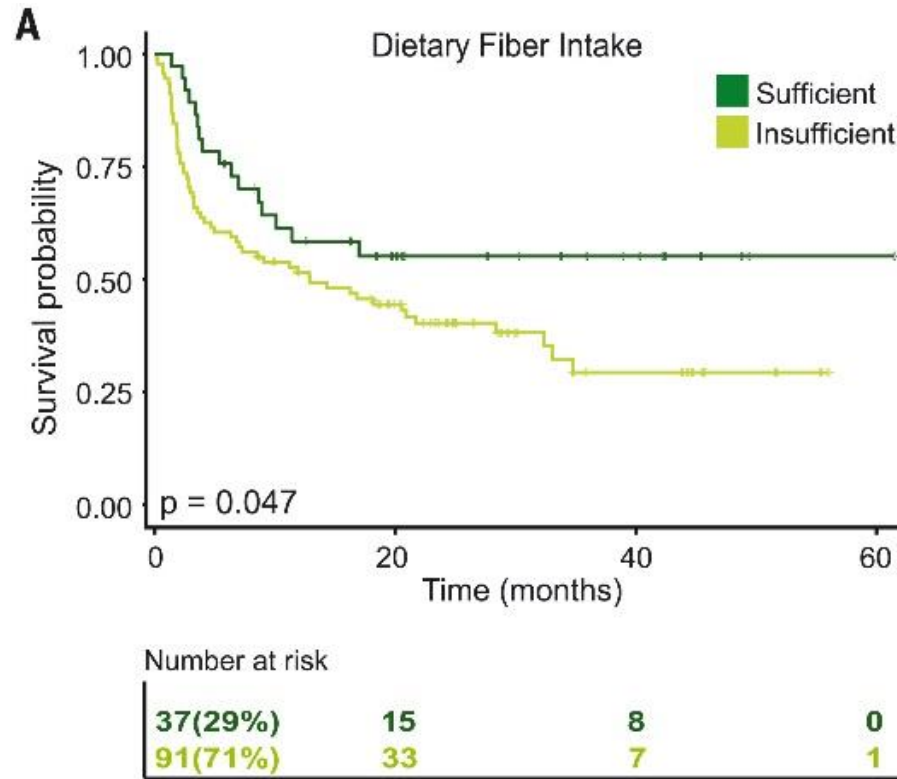
Dietary fiber may increase outcome immune checkpoint inhibition



A Overall schema for current study: to assess gut microbiota profiles, dietary habits and probiotic use with outcomes in melanoma patients



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“every 5g increase in daily dietary fiber intake corresponded with a 30% lower risk of progression or death”

Assessment of response-associated taxa from current study in baseline and on-treatment fecal microbiome samples of responders from recently published trials of FMT for ICB refractory melanoma

(D) Davar *et al.*
Science 2021

(E) Baruch *et al.*
Science 2021

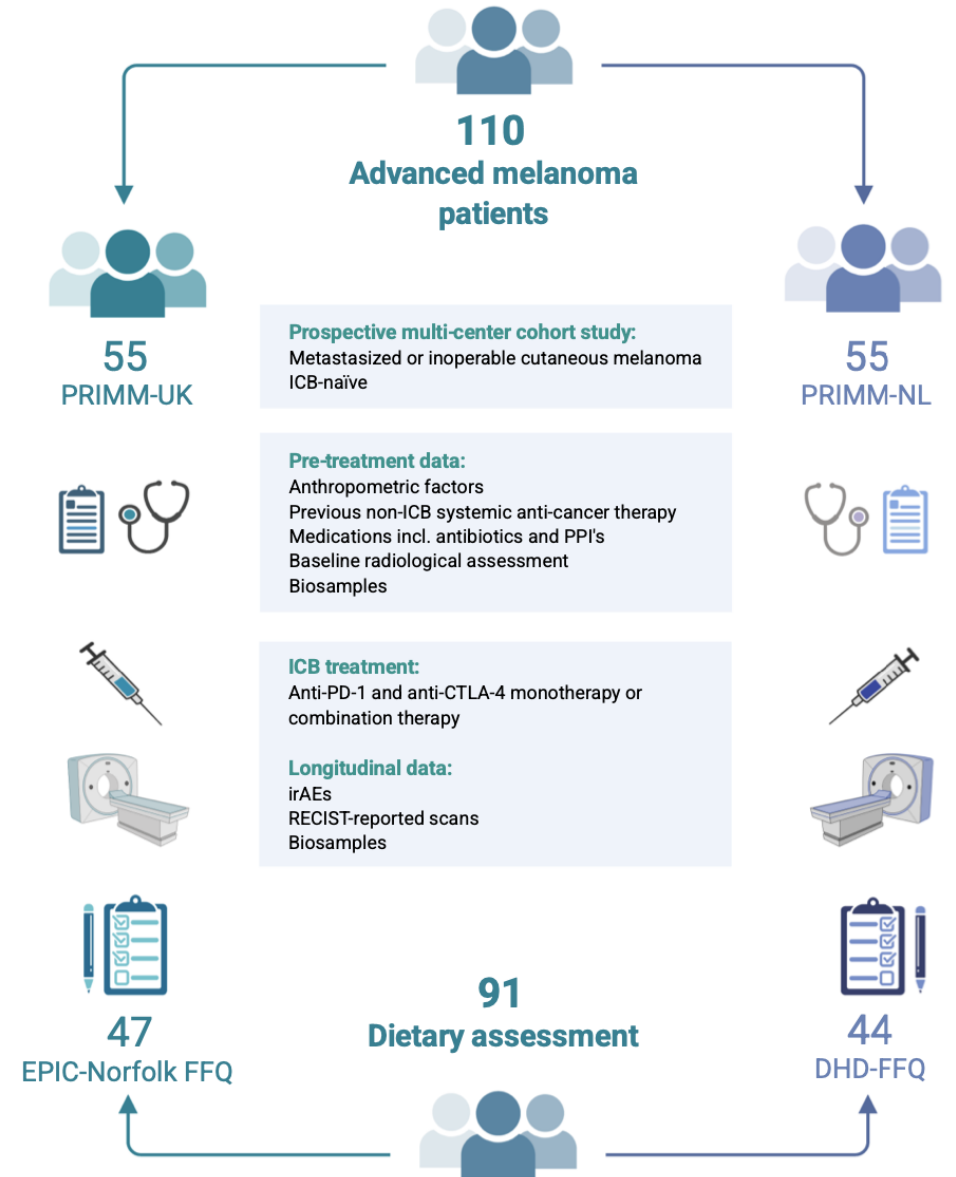
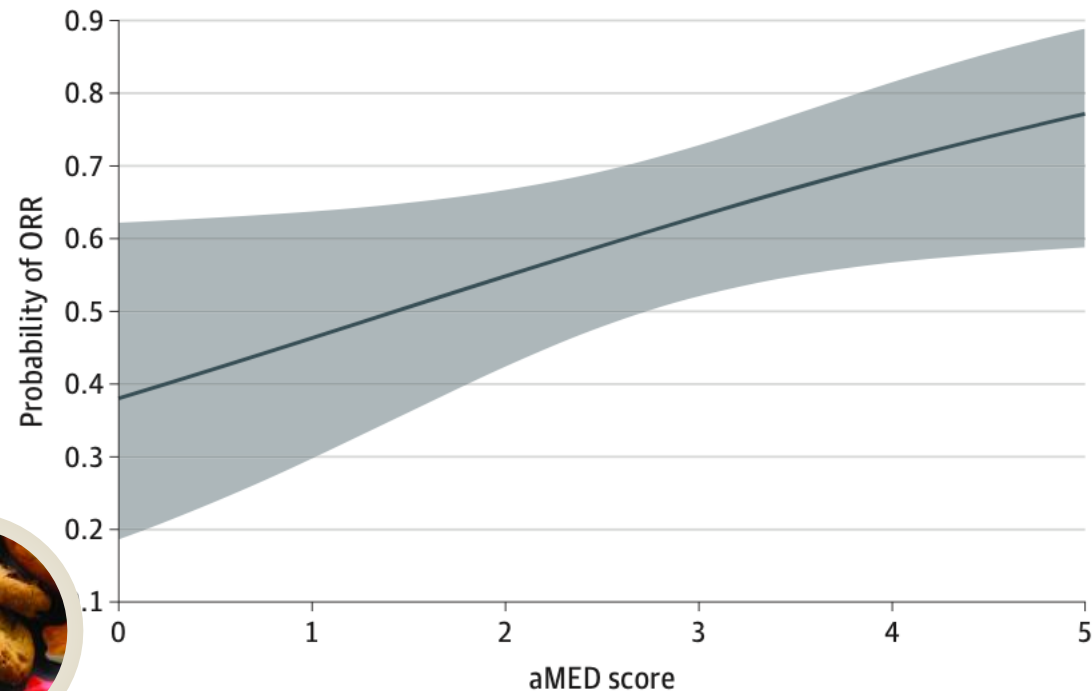
Diet fiber can increase outcome immune checkpoint inhibition

JAMA Oncology | Brief Report

Association of a Mediterranean Diet With Outcomes for Patients Treated With Immune Checkpoint Blockade for Advanced Melanoma

Laura A. Bolte, MSc; Karla A. Lee, MD; Johannes R. Björk, PhD; Emily R. Leeming, PhD; Marjo J. E. Campmans-Kuijpers, PhD; Jacco J. de Haan, MD; Arnau Vich Vila, PhD; Andrew Maltez-Thomas, PhD; Nicola Segata, PhD; Ruth Board, MD; Mark Harries, MD, PhD; Paul Lorigan, MD, PhD; Elisabeth G. E. de Vries, MD, PhD; Paul Nathan, MD, PhD; Rudolf Fehrmann, MD; Véronique Bataille, MD, PhD; Tim D. Spector, MD, PhD; Geke A. P. Hospers, MD, PhD; Rinse K. Weersma, MD, PhD

Figure. Association Between Overall Response Rate (ORR) and the Alternate Mediterranean Diet Score (aMED) Across Both Cohorts



How to optimize ICI treatment?

Prior to ICI initiation:

review PPI use
avoid recent AB use



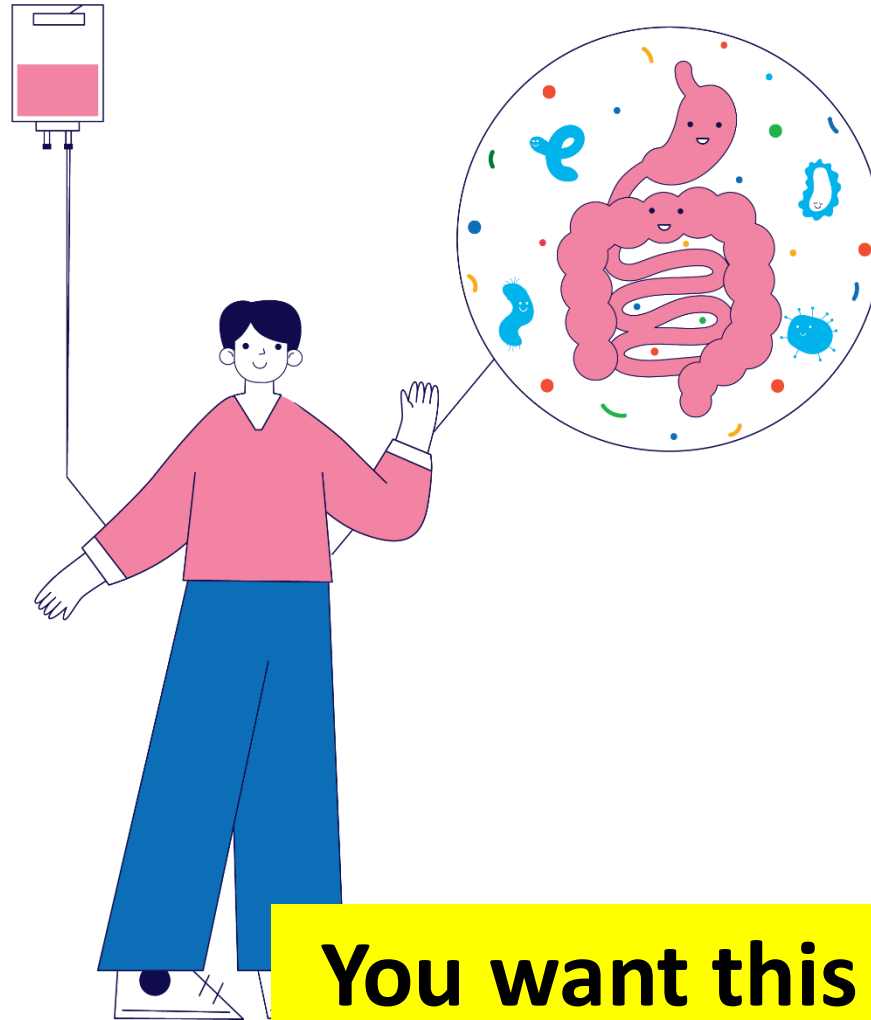
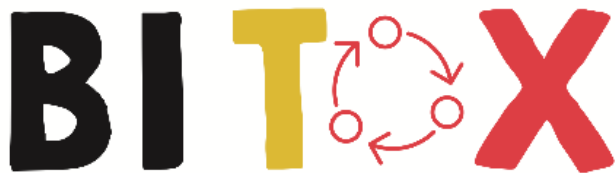
review immuno-
suppressant drugs



avoid commercially
available probiotics



address psychological
distress

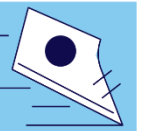


During ICI treatment:

increase and
diversify fiber intake



promote regular
physical activity

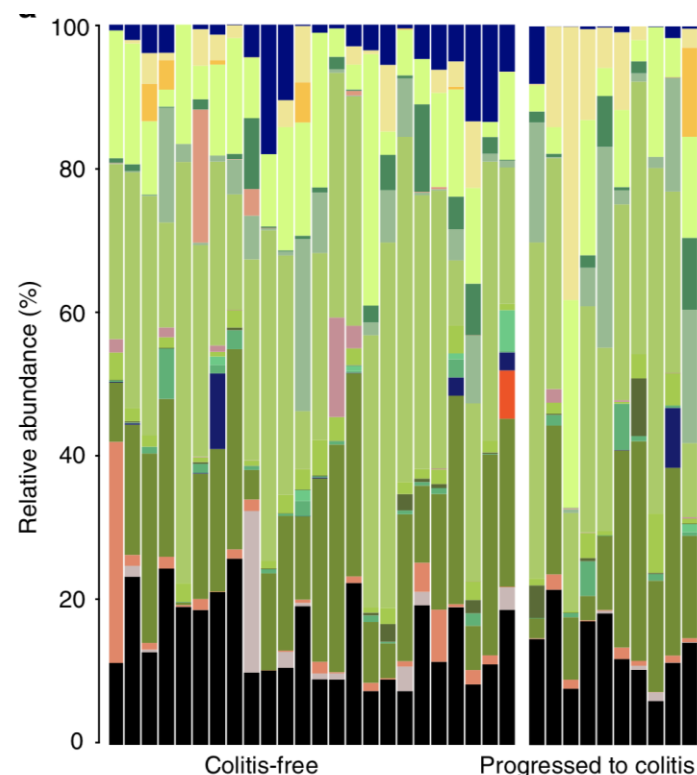


avoid immuno-
suppressant drugs



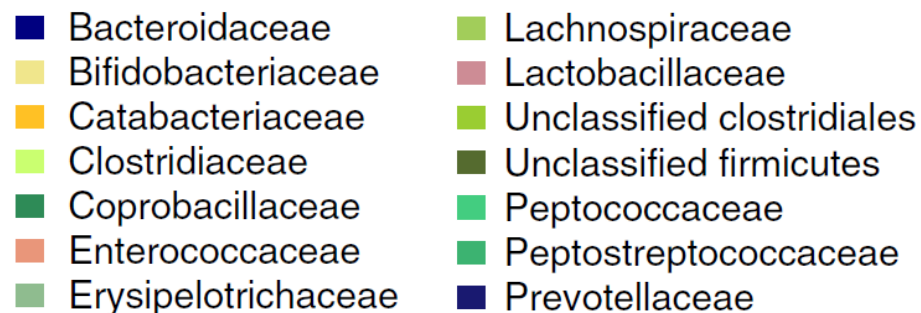
You want this in poster format?
→ bitox@bsmo.be

Diet – effect on immune related adverse events (irAE)?



Can we predict irAE based on the gut microbiome?

Can we modulate the gut microbiome in order to diminish irAE?

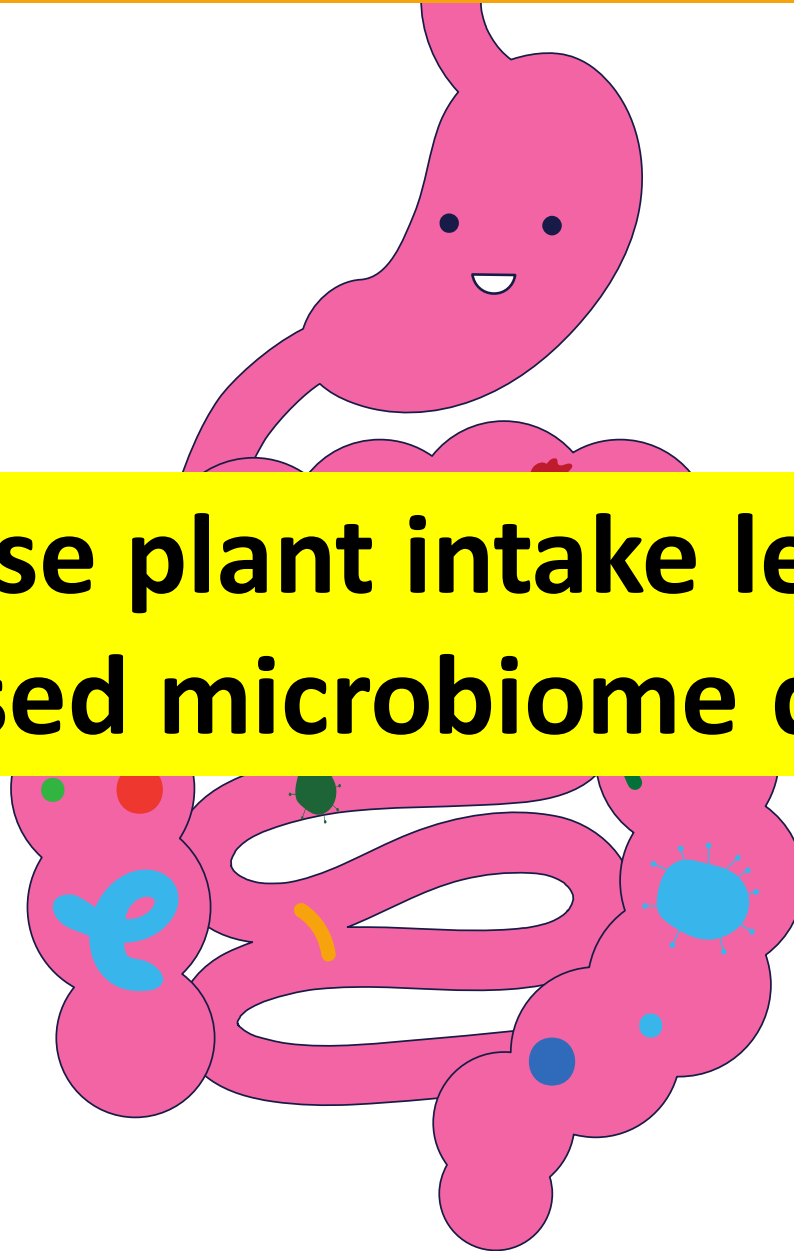


Diet – the amount of plants eaten/week influences the microbiome



**AMERICAN
GUT PROJECT**

**Diverse plant intake leads to
increased microbiome diversity**



plantenexplosie@heydeken 2020 vs 2025



8-9 june VELT

<https://velt.nu/ecotuin/plantenexplosieheydeken>

22 june GARDENTALES

<https://www.civa.brussels/nl/expo-events/plantexplosie-heideken>

What are your wildest dreams?



diversity is key

scientific curiosity

fascination for the immune system:
how to keep the balance without harming

gut microbiome is the school
of our immune system

passion for people and stories:
look behind the symptom,
dare to ask questions about
fear, death and love

FORX

FOod intervention to
Reduce immunotoXicity

side effects of cancer (immuno)therapy

what can I do for my symptoms?

personal story

food allergy as a kid

passion for food

family history

'eet je bord leeg'

hunter gatherers

our collective history

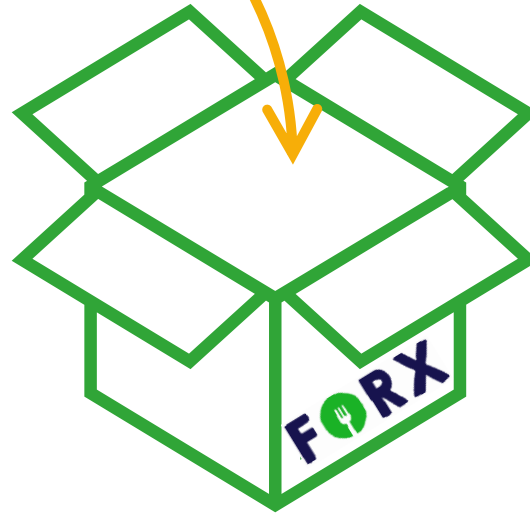
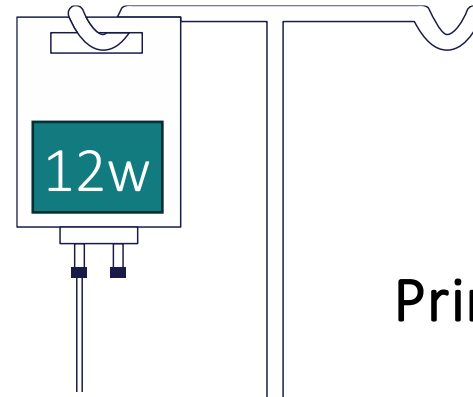
Thanksgiving address

With one mind, we honor and thank all the Food Plants we harvest from the garden. Since the beginning of time, the grains, vegetables, beans and fruit have helped the people to survive. Many other living things draw strenght from them as well. We gather together in our minds all the plant foods and send them a greeting and thanks. Now our minds are one.

Allow for the possibility of the seemingly impossible

an enormous thanks for your support





Primary endpoint: irAE incidence

Secondary endpoint: tumor response

Exploratory endpoints:



microbiome composition (16S rRNA)



immunophenotyping: B, T
Th17-related cytokines
sMAdCAM-1, SCFA

35 patients /60 included

DYSREGULATION of Immune System due to:



1. CANCER treated with immune checkpoint inhibition



FORX



FORX-01: 30 different plants
FORX-02: fine tuning results of FORX-01

Toxicity:
immune related adverse events



FORX-O



SOLUTION:

evidence based
diet advice for
patients
receiving ICI and
having CVID

PROBLEM:

no evidence
based (diet)
advice for
patients with a
dysregulated
immune system

2. Common variable immune disorder



KNIVES



KNIVES-01: 30 different plants

Infections
Auto inflammation



DELICIOUS

PATIENT EMPOWERMENT
more tools for goal oriented care

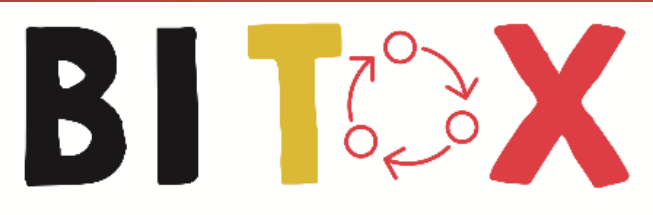


Vragen - Questions Remarques - Opmerkingen

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<https://velt.nu/ecotuin/plantenexplosieheydeken>

8-9 june VELT

<https://www.civa.brussels/nl/expo-events/plantexplosie-heideken>

22 june GARDENTALES

