

## COLLAGEN - Stærk, Sund og Smertefri

Her finder du referencer og links til interessante artikler omkring antiinflammatorisk kost og levevis. Listen er et uddrag af den videnskabelige litteratur samt anden kompetent omtale. Fra de faglige artikler kan du via deres egne referencer komme videre i faglitteraturen. Mange er anvendt som research til bogen 'Collagen – Stærk, sund og smertefri' (Politikens Forlag). Nye referencer tilføjes løbende.

Collagen - Stærk, sund og smertefri

[https://www.saxo.com/dk/collagen\\_jerk-w-langerkaren-lyager\\_indbundet\\_9788740059076](https://www.saxo.com/dk/collagen_jerk-w-langerkaren-lyager_indbundet_9788740059076)

21 nye helbredende dage med antiinflammatorisk kost

[https://www.saxo.com/dk/21-nye-helbredende-dage-med-antiinflammatorisk-kost\\_jerk-w-langerlouise-bruun\\_indbundet\\_9788740046595](https://www.saxo.com/dk/21-nye-helbredende-dage-med-antiinflammatorisk-kost_jerk-w-langerlouise-bruun_indbundet_9788740046595)

- se også bogens litteraturliste:

<http://jerk.dk/Antiinflammatorisk%20kost%20referencer.pdf>

Sundt blodtryk på 14 dage

[https://www.saxo.com/dk/sundt-blodtryk-paa-14-dage\\_jerk-w-langerjens-linnet\\_indbundet\\_9788740046823](https://www.saxo.com/dk/sundt-blodtryk-paa-14-dage_jerk-w-langerjens-linnet_indbundet_9788740046823)

- se også bogens litteraturliste: <http://jerk.dk/Sundt-blodtryk-p%C3%A5-14-dage-litteraturliste.pdf>

Sænk dit Kolesterol

[https://www.saxo.com/dk/saenk-dit-kolesterol\\_jens-linnetjerk-w-langer\\_indbundet\\_9788740069167](https://www.saxo.com/dk/saenk-dit-kolesterol_jens-linnetjerk-w-langer_indbundet_9788740069167)

- se også bogens litteraturliste: <http://jerk.dk/S%C3%A6nk-dit-kolesterol-litteraturliste.pdf>

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Opdateret 19. april 2022

### KAPITEL 1 - SPIS SOM DIN OLDEMOR

Se referencerne til dette kapitel sidst i denne fil.

## KAPITEL 2 - COLLAGEN FOR BEGYNDERE

Interview:

Yu Fu. Professor, forskningschef i fødevarevidenskab på Southwest University i Kina. Tidligere Aarhus Universitet og Københavns Universitet.

Interview:

Hanne Christine Bertram. Professor i fødevarevidenskab ved Aarhus Universitet.

The triple helix of collagens - an ancient protein structure that enabled animal multicellularity and tissue evolution. Aaron Let al. J Cell Sci 2018;9;131(7)  
<https://jcs.biologists.org/content/131/7/jcs203950.abstract>

Collagen - forskellige typer

<https://en.wikipedia.org/wiki/Collagen>

Eksempler på indhold i forskellige væv. Procenttallet afhænger af, hvordan man beregner det (fx som procent af tørstof, af proteiner, af organisk materiale, af totalvægt osv. Kan også være forskel på fx brusk forskellige steder i kroppen.)

- sene: collagen accounting for 65-80% and elastin approximately 1-2% of the dry mass of the tendon.

<https://pubmed.ncbi.nlm.nih.gov/11085557>

- knogle: In bone, collagen represents more than 90% of the organic matrix.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2577747/>

- hud: In normal skin of adult people, collagen fibers account for 90% of all dermal fiber.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6940999/>

- brusk: Collagen is the most abundant structural macromolecule in ECM, and it makes up about 60% of the dry weight of cartilage.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3445147/>

Bindevævet opbygning

Genesers Histology. Munksgaard 2020

Kroppens optag af collagen

Enzymatic Hydrolysis of a Collagen Hydrolysate Enhances Postprandial Absorption Rate - A Randomized Controlled Trial. Skov K1 et al. Nutrients 2019;11(5)

<https://www.ncbi.nlm.nih.gov/pubmed/31086034>

Side 39 – nogle data bag grafikken

Beneficial Effects of Collagen Hydrolysate: A Review on Recent Developments. Hongdong Song et al. Biomedical Journal of Scientific & Technical Research 2017;1(2),458-461

<https://biomedres.us/fulltexts/BJSTR.MS.ID.000217.php>

Plasma Amino Acid Concentrations After the Ingestion of Dairy and Collagen Proteins, in Healthy Active Males. Rebekah D et al. Front Nutr 2019;6:163  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6803522/>

Effect of Collagen Tripeptide on Atherosclerosis in Healthy Humans. J Atheroscler Thromb. 2017 May 1;24(5):530-538  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5429168/>

Collagen Supplementation: Is It All Hype? International Food Information Council. June 11, 2019  
<https://foodinsight.org/collagen-supplementation-is-it-all-hype/>

A Review of the Effects of Collagen Treatment in Clinical Studies. Polymers 2021, 13(22), 3868  
<https://www.mdpi.com/2073-4360/13/22/3868/htm>

Collagen i mad  
Significant Amounts of Functional Collagen Peptides Can Be Incorporated in the Diet While Maintaining Indispensable Amino Acid Balance. Nutrients 2019; 11(5): 1079  
<https://www.mdpi.com/2072-6643/11/5/1079/htm>

Bioaktive peptider  
Potential Health Functions of Collagen Bioactive Peptides: A Review. Mengqian Chen et al. American Journal of Biochemistry and Biotechnology 2020, 16 (4): 507-519  
<https://thescipub.com/pdf/ajbbbsp.2020.507.519.pdf>

### KAPITEL 3 - BEVÆGELSESFRIHEDEN LÆNGE LEVE

Interview:

Michael Kjær. Klinisk professor i idrætsmedicin på Institut for Klinisk Medicin ved Københavns Universitet. Overlæge på Bispebjerg og Frederiksberg Hospital.

Interview:

Arne Astrup. Professor ved Institut for Idræt og Ernæring på Københavns Universitet. Programdirektør Novo Nordisk Fonden.

Interview:

Lars Hyldstrup. Overlæge, dr.med. Osteoporoseekspert. Medlem af landsbestyrelsen for Osteoporose-foreningen.

Interview:

Gregory Shaw. Ernæringsansvarlig for Swimming Australia.

Interview:

Lars Holm. Forskningschef i Team Danmark. Lektor på Center for Sund Aldring på Københavns Universitet og postdoc ved Institut for Idrætsmedicin ved Bispebjerg Hospital. Baggrund som professor ved University of Birmingham, School of Sport, Exercise and Rehabilitation Sciences.

Interview:

Tom Clifford. Forsker og underviser i fysiologi og ernæring på Loughborough University, Leicestershire, UK

- LED OG BRUSK

Side 46 - Smertedata

- <http://nfa.dk/da/nyt/nyheder/2018/smerter-i-kroppen-hos-hver-tredje-lonmodtager>

- <https://www.dr.dk/nyheder/indland/aeldre-medarbejdere-i-ny-undersogelse-halvdelen-har-smerter-hver-uge>

Side 49 - Metaanalyse

Dietary supplements for treating osteoarthritis: a systematic review and meta-analysis. Liu X et al. Br J Sports Med 2018;52(3):167-175

[https://www.oarsijournal.com/article/S1063-4584\(17\)30543-5/fulltext](https://www.oarsijournal.com/article/S1063-4584(17)30543-5/fulltext)

Side 49 - Indisk studie

A double-blind, placebo-controlled, randomised, clinical study on the effectiveness of collagen peptide on osteoarthritis. Kumar, S et al. J Sci Food Agric 2015;95(4):702-7

<https://onlinelibrary.wiley.com/doi/10.1002/jsfa.6752>

Side 49 nederst - kinesisk forskergruppe

Collagen peptides improve knee osteoarthritis in elderly women: A 6-month randomized, double-blind, placebo-controlled study. Jiang J.X. et al. Agro FOOD Industry Hi Tech 2014;25:19-23

[https://www.researchgate.net/publication/285117930\\_Collagen\\_peptides\\_improve\\_knee\\_osteoarthritis\\_in\\_elderly\\_women\\_A\\_6-month\\_randomized\\_double-blind\\_placebo-controlled\\_study](https://www.researchgate.net/publication/285117930_Collagen_peptides_improve_knee_osteoarthritis_in_elderly_women_A_6-month_randomized_double-blind_placebo-controlled_study)

Side 50 - Collagenpeptider vs. chondroitin

Efficacy and tolerability of an undenatured type II collagen supplement in modulating knee osteoarthritis symptoms: a multicenter randomized, double-blind, placebo-controlled study. Lugo JP et al. Nutr J 2016;15:14

<https://nutritionj.biomedcentral.com/articles/10.1186/s12937-016-0130-8>

Side 50 - Genopbygning af ledbrusk

Daily oral consumption of hydrolyzed type 1 collagen is chondroprotective and anti-inflammatory in murine posttraumatic osteoarthritis. Dar Q-A et al. PLoS ONE 2017;12(4):e0174705

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0174705>

Side 54 - Leddegigt

A multicenter, double-blind, randomized, controlled phase III clinical trial of chicken type II collagen in rheumatoid arthritis. Wei W et al. Arthritis Res Ther 2009;11(6):R180

<https://arthritis-research.biomedcentral.com/articles/10.1186/ar2870>

Efficacy of oral collagen in joint pain - osteoarthritis and rheumatoid arthritis. Woo T et al. J Arthritis 2017;6:233

<https://www.omicsonline.org/open-access/efficacy-of-oral-collagen-in-joint-pain--osteoarthritis-and-rheumatoid-arthritis-2167-7921-1000233.php?aid=87350>

- KNOGLER

Osteoporose i Danmark

<https://www.sygeforsikring.dk/nyt-sundt/knogleskoerhed-den-skjulte-sygdom>

<https://www.sst.dk/-/media/Udgivelser/2018/Osteoporose/Osteoporose-bilag.ashx?la=da&hash=4678091A7861A1E9B674E11494C176F81C396C4B>

Side 59 - Calcium

Menneskets Ernæring 2015. 4. udgave, s. 532. Munksgaard

Side 61 - Oversigtsartikel

Biological effect of hydrolyzed collagen on bone metabolism. Daneault A et al. Crit Rev Food Sci Nutr. 2017 Jun 13;57(9):1922-1937

<https://www.tandfonline.com/doi/full/10.1080/10408398.2015.1038377>

Side 61 - Dyrestudier

Hydrolyzed collagen improves bone metabolism and biomechanical parameters in ovariectomized mice: an in vitro and in vivo study. Guillerminet, F et al. Bone 2010;46(3):827-834

Bone 2010;46(3):827-834

<https://www.sciencedirect.com/science/article/abs/pii/S8756328209020031>

Hydrolyzed collagen improves bone status and prevents bone loss in ovariectomized C3H/HeN mice. Guillerminet F. et al. Osteoporosis International 2012;23:1909-1919

<https://link.springer.com/article/10.1007%2Fs00198-011-1788-6>

Hydrolyzed collagen contributes to osteoblast differentiation in vitro and subsequent bone health in vivo. Daneault, A et al. Osteoarthritis and Cartilage 2014;22:S131

[https://www.oarsijournal.com/article/S1063-4584\(14\)00280-5/fulltext](https://www.oarsijournal.com/article/S1063-4584(14)00280-5/fulltext)

Human Enriched Serum Following Hydrolysed Collagen Absorption Modulates Bone Cell Activity: from Bedside to Bench and Vice Versa

<https://www.mdpi.com/2072-6643/11/6/1249/htm>

Side 62 – tysk forsøg

Specific Collagen Peptides Improve Bone Mineral Density and Bone Markers in Postmenopausal Women-A Randomized Controlled Study. *Nutrients*. 2018 Jan 16;10(1):97

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5793325/>

Side 62

Combined oral administration of bovine collagen peptides with Calcium citrate inhibits bone loss in ovariectomized rats. Liu JL, et al. *PLoS ONE* 2015, 10 (8):e0135019

<https://www.ncbi.nlm.nih.gov/pubmed/26258559>

- TRÆNING

Side 66

Collagen peptide supplementation in combination with resistance training improves body composition and increases muscle strength in elderly sarcopenic men: a randomised controlled trial. Zdzieblik D et al. *Br J Nutr* 2015 Oct 28;114(8):1237-1245

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4594048/>

Tendon Stiffness, Collagen Production & Gelatin for Performance & Injury. Keith Baar. Podcast episode 143. September 13, 2016.

<https://sigmanutrition.com/episode143/>

Side 68 - sjippeforsøg

Vitamin C-enriched gelatin supplementation before intermittent activity augments collagen synthesis. Shaw et al. *Am J Clin Nutr* 2017;105(1):136-143

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5183725/>

Side 70

Collagen Peptides for Injury Prevention & Tissue repair. Laurent Bannock discuss with Professor Keith Baar. Podcast episode 109, Febr. 21, 2019.

[www.wedosscience.com](http://www.wedosscience.com)

Collagen synthesis, ketogenic diet, mTORC1 signaling, autophagy, post strength training nutrition, and more. STEM-Talk. Keith Baar. Podcast episode 63. May 8, 2018.

[www.ihmc.us](http://www.ihmc.us)

Tendon Stiffness, Collagen Production & Gelatin for Performance & Injury. Keith Baar. Podcast episode 143. September 13, 2016.

<https://sigmanutrition.com/episode143/>

Training and nutrition to prevent soft tissue injuries and accelerate return to play. Baar, K. *Sports Science Exchange*, 28(142):1-6

<https://www.gssiweb.org/sports-science-exchange/article/sse-142-training-and-nutrition-to-prevent-soft-tissue-injuries-and-accelerate-return-to-play>

Nutrition for the Prevention and Treatment of Injuries in Track and Field Athletes. Graeme L et al. *Int J Sport Nutr Exerc Metab* 2019;29(2):189-197  
<https://ucdavis.pure.elsevier.com/en/publications/nutrition-for-the-prevention-and-treatment-of-injuries-in-track-a>

Throw away the Anti-Inflammatories & Start Loading your Damaged Tendons. Michael Kjær. *Aspetar Sports Medicine Journal*. September 2019,390-393  
<https://www.aspetar.com/journal/viewarticle.aspx?id=175#.XkVgrRNKgq8>

Kollagenomsætning i akillessenen - hvad ved vi og hvor mangler vi svar? Allan Cramer et al. *Dansk Sportsmedicin* 16. juli 2019  
<https://dansksportsmedicin.dk/kollagenomsaetning-i-akillessenen-hvad-ved-vi-og-hvor-mangler-vi-svar/>

Role of extracellular matrix in adaptation of tendon and skeletal muscle to mechanical loading. Kjaer M. *Physiological Review* 2004;84(2):649-98  
<https://journals.physiology.org/doi/full/10.1152/physrev.00031.2003>

Load magnitude affects patellar tendon mechanical properties but not collagen or collagen cross-linking after long-term strength training in older adults. Christian S et al. *BMC Geriatrics* 2019;19:30  
<https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-019-1043-0>

Derfor tager det lang tid at komme sig over seneskader. 15. febr. 2013. Videnskab.dk  
<https://videnskab.dk/kort-nyt/derfor-tager-det-lang-tid-komme-sig-over-sene-skader>

Side 71

24-Week study on the use of collagen hydrolysate as a dietary supplement in athletes with activity-related joint pain. Clark KL et al. *Current Medical Research and Opinion* 2008,24,5,1485-96  
<https://www.tandfonline.com/doi/abs/10.1185/030079908X291967>

Side 71

Improvement of activity-related knee joint discomfort following supplementation of specific collagen peptides. Zdzieblik D et al. *Appl Physiol Nutr Metab* 2017;42(6):588-595  
<https://www.ncbi.nlm.nih.gov/pubmed/28177710>

Effectiveness of collagen supplementation on pain scores in healthy individuals with self-reported knee pain; A randomized controlled trial. Coen C. et al. *Appl Physiol Nutr Metab*. 2020 Jan 28  
<https://cdnsiencepub.com/doi/10.1139/apnm-2019-0654>

Side 72 - restitution drop jumps

The effects of collagen peptides on muscle damage, inflammation and bone turnover following exercise: a randomized, controlled trial. Clifford T et al. Amino Acids 2019;51:691

<https://link.springer.com/article/10.1007%2Fs00726-019-02706-5>

Side 77: Sportsskader

Runsafe, Institut for Folkesundhed, Aarhus Universitet.

[https://www.idan.dk/nyhedsoversigt/nyheder/2016/a886\\_ny-undersoegelse-giver-indblik-i-danskernes-idraetsskader/](https://www.idan.dk/nyhedsoversigt/nyheder/2016/a886_ny-undersoegelse-giver-indblik-i-danskernes-idraetsskader/)

Team Danmark: Sportsskader - forebyggelse og behandling

<https://umbraco.teamdanmark.dk/media/1834/06138-sportsskader-boeger-team-danmark.pdf?>

Team Danmark: Skadesforebyggende træning

<https://teamdanmark.dk/traen-som-en-atlet/sportsmedicin/skadesforebyggende-traening>

#### KAPITEL 4 - FRISK OG SPÆNDSTIG HUD INDEFRA

Interview:

Peter Bjerring. Professor dr. med. Overlæge på afdelingen for hud- og kønssygdomme ved Aalborg Universitetshospital.

Interview:

Janne Prawitt. Biolog og ernæringsforsker. Forskningsleder hos virksomheden Rousselot.

Interview:

Finn Gottrup. Professor. Tidligere leder af Videncenter for Sårheling på Bispebjerg Hospital og Odense Universitetscenter for Sårheling.

Interview:

Glynis Ablon. Læge. Ablon Skin Institute Research Center, Manhattan Beach, Californien.

Metanalyse 19 kliniske studier af huden

Effects of hydrolyzed collagen supplementation on skin aging: a systematic review and meta-analysis. Int J Dermatol 2021;60(12):1449-1461

<https://onlinelibrary.wiley.com/doi/10.1111/ijd.15518>

Samlet analyse af kliniske studier på huden

Oral Collagen Supplementation: A Systematic Review of Dermatological Applications. J Drugs Dermatol 2019;18(1):9-16

<https://jddonline.com/articles/dermatology/S1545961619P0009X>



Kollagen er afgørende for spændstig hud, sårheling og forebyggelse af slidgigt. Hanne Christine Bertram. 13. dec. 2017. Videnskab.dk  
<https://videnskab.dk/krop-sundhed/kollagen-byggesten-protein-hud-saar-slidgigt>

Slowing Down The Clock With Collagen Peptides. Cosmeticsbusiness.com  
January 2021  
[https://www.mastersense.com/wp-content/uploads/2021/05/Rousselot\\_CB\\_Jan-1-1.pdf](https://www.mastersense.com/wp-content/uploads/2021/05/Rousselot_CB_Jan-1-1.pdf)

#### Side 83 - Fugt

The effect of oral collagen peptide supplementation on skin moisture and the dermal collagen network: evidence from an ex vivo model and randomized, placebo-controlled clinical trials. Asserin, J. et al. Journal of Cosmetic Dermatology 2015;14:291-301  
<https://onlinelibrary.wiley.com/doi/full/10.1111/jocd.12174>

#### Side 83 – hudprøvestudie

The effect of oral collagen peptide supplementation on skin moisture and the dermal collagen network: evidence from an ex vivo model and randomized, placebo-controlled clinical trials. Asserin, J. et al. Journal of Cosmetic Dermatology 2015;14:291-301  
<https://onlinelibrary.wiley.com/doi/full/10.1111/jocd.12174>

#### Side 84 – tredje studie

Daily oral supplementation with collagen peptides combined with vitamins and other bioactive compounds improves skin elasticity and has a beneficial effect on joint and general wellbeing. Czajka A et al. Nutr Res 2018;57:97-108  
<https://www.sciencedirect.com/science/article/pii/S0271531717311508?via%3Dihub>

#### s. 86 - rynker

Oral supplementation of specific collagen peptides has beneficial effects on human skin physiology: a double-blind, placebo-controlled study. Kania EM, et al. Skin Pharmacol Physiol 2014;27:47-55  
<https://pubmed.ncbi.nlm.nih.gov/23949208/>  
[https://www.researchgate.net/publication/255957972\\_Oral\\_Supplementation\\_of\\_Specific\\_Collagen\\_Peptides\\_Has\\_Beneficial\\_Effects\\_on\\_Human\\_Skin\\_Physiology\\_A\\_Double-Blind\\_Placebo-Controlled\\_Study](https://www.researchgate.net/publication/255957972_Oral_Supplementation_of_Specific_Collagen_Peptides_Has_Beneficial_Effects_on_Human_Skin_Physiology_A_Double-Blind_Placebo-Controlled_Study)

#### Side 85 – danner nyt collagen

The effect of oral collagen peptide supplementation on skin moisture and the dermal collagen network: evidence from an ex vivo model and randomized, placebo-controlled clinical trials. Asserin, J. et al. Journal of Cosmetic Dermatology 2015;14:291-301  
<https://onlinelibrary.wiley.com/doi/full/10.1111/jocd.12174>

### Sårheling

Ingestion of bioactive collagen hydrolysates enhanced pressure ulcer healing in a randomized double-blind placebo-controlled clinical study. Sugihara F et al. *Sci Rep* 2018;8(1):11403

<https://globalhp.com/wp-content/uploads/2019/04/Ingestion-of-bioactive-collagen-hydrolysates-enhanced-PU-healing.pdf>

### Atopisk eksem

Anti-inflammatory effect of collagen tripeptide in atopic dermatitis. Hakuta et al. *J Dermatol Sci* 2017;88(3):357-364

[https://www.jdsjournal.com/article/S0923-1811\(17\)30574-1/fulltext](https://www.jdsjournal.com/article/S0923-1811(17)30574-1/fulltext)

### Rygning

Less collagen production in smokers. Jørgensen LN et al. *Surgery* 1998;123:450-5

[https://www.surgjournal.com/article/S0039-6060\(98\)70167-9/fulltext](https://www.surgjournal.com/article/S0039-6060(98)70167-9/fulltext)

### Sukker

- High serum glucose levels are associated with a higher perceived age.

Noordam R et al. *AGE* 2013;35:189-195

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3543736/>

- Effects of Long-Term Physical Activity and Diet on Skin Glycation and Achilles Tendon Structure. Hjerrild JN et al. *Nutrients* 2019;11(6):1409

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6627972/>

- Nutrition and aging skin: Sugar and glycation. Danby FW. *Clin Dermatol* 2010;28(4):409-411

<https://www.sciencedirect.com/science/article/pii/S0738081X10000428?via%3Dihub>

### Grøn te

- Green Tea Extract Suppresses the Age-Related Increase in Collagen Crosslinking and Fluorescent Products in C57BL/6 Mice. Rutter K et al. *Int J Vitam Nutr Res* 2003;73(6):453-460

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3561737/>

- Green tea extract protects human skin fibroblasts from reactive oxygen species induced necrosis. Silverberg J et al. *J Drugs Dermatol* 2011;10(10):1096-101

<https://www.ncbi.nlm.nih.gov/pubmed/21968658>

### Gærflager

Shiseido Reveals the Relevance of Capillaries in Skin Elasticity. Shiseido press release. Oct. 16, 2019

<https://corp.shiseido.com/en/news/detail.html?n=00000000002780>

### Cellulite

Dietary supplementation with specific collagen peptides has a body mass index-dependent beneficial effect on cellulite morphology. Schunck M et al. *J Med Food* 2015;18(12):1340-1348

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4685482/>

## Negle

Oral supplementation with specific bioactive collagen peptides improves nail growth and reduces symptoms of brittle nails. Hexsel D et al. J Cosmet Dermatol. 2017;16(4):520-526  
<https://onlinelibrary.wiley.com/doi/10.1111/jocd.12393>  
[https://cdn.awsli.com.br/71/71274/arquivos/Nails%20-%202017\\_Hexsel.pdf](https://cdn.awsli.com.br/71/71274/arquivos/Nails%20-%202017_Hexsel.pdf)

## Hår

A Six-Month, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Safety and Efficacy of a Nutraceutical Supplement for Promoting Hair Growth in Women With Self-Perceived Thinning Hair. Ablon G et al. J Drugs Dermatol 2018;17(5):558-565  
<https://jddonline.com/articles/dermatology/S1545961618P0558X/>

## KAPITEL 5 - DE BEDSTE KILDER TIL COLLAGEN I MADEN

### Interview:

Flemming Jessen. Seniorforsker ved DTU Fødevareinstituttet.

### Interview:

Yu Fu. Professor, forskningschef i fødevarevidenskab på Southwest University i Kina. Tidligere Aarhus Universitet og Københavns Universitet.

## Blæksprutter

- Collagen from squid and its biological activity. Dhanya PJ et al. International Journal of Current Pharmaceutical Research. March 2017  
<https://www.semanticscholar.org/paper/collagen-from-squid-and-its-biological-activity-joy-kumar/8a7de34b3a31c1f063652c26b5c2f77eb4c18008>
- Spise blæksprutter - er du mør? Aktuel Naturvidenskab 2018;3:8-13  
[https://aktuelnaturvidenskab.dk/fileadmin/Aktuel\\_Naturvidenskab/nr-3/AN3-2018blaeksprutter.pdf](https://aktuelnaturvidenskab.dk/fileadmin/Aktuel_Naturvidenskab/nr-3/AN3-2018blaeksprutter.pdf)
- Blæksprutter er fremtidens bæredygtige mad. Berlingske. 10. maj 2018  
<https://www.berlingske.dk/det-gode-liv/blaeksprutter-er-fremtidens-baeredygtige-mad>

## Collagen fra alternative kilder

Functional and bioactive properties of collagen and gelatin from alternative sources: A review. Gómez-Guillén MC et al. Food Hydrocolloids 2011;25,8,1813-1827  
<https://www.sciencedirect.com/science/article/pii/S0268005X11000427>

CO2-aftryk

Controversies in Science and Technology: From Sustainability to Surveillance, vol 4. 2014, s. 100. Oxford University Press

<https://books.google.dk/books?id=HmzrAwAAQBAJ&pg=PA100&lpg=PA100&q=CO2+5+animal+species+12+plant&source=bl&ots=CfcieoFtMS&sig=ACfU3U3JW2CIRzCcBEAQTK4eUuFhN7BPzQ&hl=en&sa=X&ved=2ahUKEwjWiZzr8tjnAhWNLewKHQp0BA8Q6AEwAHoECAgQAQ#v=onepage&q=CO2%20%20animal%20species%2012%20plant&f=false>

Tenderness as well as bioactivity - enzymatic exploration of collagen. PhD thesis by Yu Fu. July 2016. Department of Food Science, Aarhus University  
[https://pure.au.dk/portal/files/101482359/PhD\\_thesis\\_Yu\\_Fu.pdf](https://pure.au.dk/portal/files/101482359/PhD_thesis_Yu_Fu.pdf)

## KAPITEL 6 - SÆT EKSTRA FUT I KROPPENS COLLAGENFABRIK

Biochemistry, Collagen Synthesis. Wu M et al. StatPearls. April 21, 2019  
<https://www.ncbi.nlm.nih.gov/books/NBK507709/>

Vitamin C

- Vitamin C and Skin Health. Linus Pauling Institute. Oregon State University  
<https://lpi.oregonstate.edu/mic/health-disease/skin-health/vitamin-C>

- Vitamin C-enriched gelatin supplementation before intermittent activity augments collagen synthesis. Shaw, G. et al. Am J Clin Nutr 2017;105(1):136-143

<https://academic.oup.com/ajcn/article/105/1/136/4569849>

Sporstoffer

Microelements for bone boost. Della Pepa G, et al. Clin Cases Miner Bone Metab 2017;13(3):181-185

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5318168/>

Zink

- Zinc may increase bone formation through stimulating cell proliferation, alkaline phosphatase activity and collagen synthesis in osteoblastic MC3T3-E1 cells. Nutr Res Pract 2010;4(5):356-361

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2981717/>

mellemdistance- Influence of zinc on synthesis and the accumulation of collagen in early granulation tissue. Tengrup I et al. Surg Gynecol Obstet. 1981 Mar;152(3):323-6

<https://www.ncbi.nlm.nih.gov/pubmed/7466582>

- Mangel på zink får unge til at stoppe med at vokse. Videnskab.dk

<https://videnskab.dk/krop-sundhed/mangel-paa-zink-faar-unge-til-at-stoppe-med-at-vokse>

Svovl

Changes in Collagen Metabolism Caused by Feeding Diets Low in Inorganic Sulfur. Brown RG et al. The Journal of Nutrition 1965, 87, 228-232

<https://academic.oup.com/jn/article-abstract/87/2/228/4777697>

## Lycoplen og lutein

- Supplementation with the antioxidant lycopene significantly decreases oxidative stress parameters and the bone resorption marker N-telopeptide of type I collagen in postmenopausal women. Mackinnon ES et al. Osteoporos Int 2011;22(4):1091-1101

<https://www.ncbi.nlm.nih.gov/pubmed/20552330>

- Lycopene, a powerful antioxidant, significantly reduces the development of the adhesion phenotype. Fletcher NM et al. Syst Biol Reprod Med. 2014 Feb;60(1):14-20.

<https://www.ncbi.nlm.nih.gov/pubmed/24219141>

- Molecular evidence that oral supplementation with lycopene or lutein protects human skin against ultraviolet radiation: results from a double-blinded, placebo-controlled, crossover study. Grether-Beck S et al. Br J Dermatol. 2017 May;176(5):1231-1240

<https://onlinelibrary.wiley.com/doi/full/10.1111/bjd.15080>

- Fruits and vegetables that are sources for lutein and zeaxanthin: the macular pigment in human eyes. Sommerburg O et al. Br J Ophthalmol 1998;82:907-910

<https://bjo.bmj.com/content/82/8/907.full>

## Frugtmaringering

- Adding Enzymes to Improve Beef Tenderness. Chris R. Calkins, Ph.D. and Gary Sullivan, University of Nebraska

[https://www.beefresearch.org/CMDocs/BeefResearch/PE\\_Fact\\_Sheets/Adding\\_Enzymes\\_to\\_Improve\\_Beef\\_Tenderness.pdf](https://www.beefresearch.org/CMDocs/BeefResearch/PE_Fact_Sheets/Adding_Enzymes_to_Improve_Beef_Tenderness.pdf)

- Ananas og bromelin. Katrine Meyn. Dansk Kemi. 28. 01. 2019

<https://www.kemifokus.dk/ananas-og-bromelin>

- The digestion of collagen. Joseph M. Miller, Benjamin Goldman. The Journal Of Investigative Dermatology 1958

<https://core.ac.uk/download/pdf/82540898.pdf>

- Effect of papain and bromelin on muscle and collagen proteins in beef meat. Ionescu et al. The Annals of the University Dunarea de Jos of Galati Fascicle VI – Food Technology, New Series, II (XXXI), 2008, 9-16

<https://pdfs.semanticscholar.org/22dc/7fc79a5b755bc2c3d401413747f9617f86ae.pdf>

## KAPITEL 7 - ANTIINFLAMMATORISK LIVSSTIL

### Interview:

Michael Kjær. Klinisk professor i idrætsmedicin på Institut for Klinisk Medicin ved Københavns Universitet. Overlæge på Bispebjerg og Frederiksberg Hospital.

21 Nye Antiinflammatoriske Dage. Jerk W. Langer et al. Politikens Forlag 2018

Se også denne bogs litteraturliste:

<http://jerk.dk/Antiinflamatorisk%20kost%20referencer.pdf>

Chronic inflammation in the etiology of disease across the life span. *Nature Medicine* 2019;25(12):1822-1832  
<https://www.nature.com/articles/s41591-019-0675-0>

An anti-inflammatory diet as a potential intervention for depressive disorders: A systematic review and meta-analysis. *Clinical Nutrition* 2019; 38, 5, 2045-2052  
<https://www.sciencedirect.com/science/article/pii/S0261561418325408>

Dietary inflammatory index and risk of gynecological cancers: a systematic review and meta-analysis of observational studies. *J Gynecol Oncol.* 2019 May;30(3):e23  
<https://ejgo.org/DOIx.php?id=10.3802/jgo.2019.30.e23>

Anti-inflammatory Effect of Mediterranean Diet in Type 2 Diabetes Is Durable: 8-Year Follow-up of a Controlled Trial. *Diabetes Care* 2016;39:e44–e45  
<https://care.diabetesjournals.org/content/39/3/e44>

Association of animal and plant protein intake with all-cause and cause-specific mortality. *JAMA Intern Med* 2019;179(11):1509-1518  
<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2748453>

Anti-inflammatory diet in clinical practice: a review. *Nutrition and Inflammation* 2017,32(3),318-325  
<https://onlinelibrary.wiley.com/doi/full/10.1177/0884533617700353>

The importance of a balanced  $\omega$ -6 to  $\omega$ -3 ratio in the prevention and management of obesity. *Open Heart* 2016;3:e000385. doi:10.1136/openhrt-2015-000385  
<https://openheart.bmj.com/content/openhrt/3/2/e000385.full.pdf>

A diet based on multiple functional concepts improves cardiometabolic risk parameters in healthy subjects. *Nutrition & Metabolism* 2012, 9:29  
<https://nutritionandmetabolism.biomedcentral.com/articles/10.1186/1743-7075-9-29>

A diet based on multiple functional concepts improves cognitive performance in healthy subjects. *Nutrition & Metabolism* 2013, 10:49  
<https://nutritionandmetabolism.biomedcentral.com/articles/10.1186/1743-7075-10-49>

The influence of an anti-inflammatory diet on gingivitis. A randomized controlled trial. *Journal of Clinical Periodontology* 2019; 46(4): 481-490  
<https://onlinelibrary.wiley.com/doi/abs/10.1111/jcpe.13094>

The Human Intestinal Microbiome in Health and Disease. *N Engl J Med* 2016;375(24):2369-2379  
<https://www.nejm.org/doi/full/10.1056/NEJMra1600266>

The microbiome and risk for atherosclerosis. JAMA 2018;319(23):2381-2382  
<https://www.nejm.org/doi/full/10.1056/NEJMra1600266>

Your microbes at work: fiber fermenters keep us healthy. Nature  
2015;518(7540):S9  
<https://www.nature.com/articles/518S9a>

Carbs and cooking. Diabetes UK  
<https://www.diabetes.org.uk/guide-to-diabetes/enjoy-food/carbohydrates-and-diabetes/carbs-and-cooking>

Association between ultraprocessed food consumption and risk of mortality among middle-aged adults in France. JAMA Intern Med 2019;179(4):490-498  
<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2723626>

## KAPITEL 9 - TIPS & TRICKS TIL DET NEMME COLLAGENKØKKEN

Interview:

Kjeld Sørensen. Kok. Bl.a. tidligere souschef på restaurant Den Gyldne Fortun.

Interview:

Yu Fu. Professor, forskningschef i fødevarevidenskab på Southwest University i Kina. Tidligere Aarhus Universitet og Københavns Universitet.

The science of slow cooking

[https://www.scienceofcooking.com/meat/slow\\_cooking1.htm](https://www.scienceofcooking.com/meat/slow_cooking1.htm)

## KAPITEL 11 - COLLAGENTILSKUD

Interview:

Yu Fu. Professor, forskningschef i fødevarevidenskab på Southwest University i Kina. Tidligere Aarhus Universitet og Københavns Universitet.

Tendon Stiffness, Collagen Production & Gelatin for Performance & Injury.

Keith Baar. Podcast episode 143. September 13, 2016.

<https://sigmanutrition.com/episode143/>

15 minutter til madlavning hver dag: Madkulturen #1 2019

[https://www.madkulturen.dk/wp-content/uploads/2019/11/MKxMT\\_Madtanker1-det-hjemmelavede-m%C3%A5ltid-i-frit-fald.pdf](https://www.madkulturen.dk/wp-content/uploads/2019/11/MKxMT_Madtanker1-det-hjemmelavede-m%C3%A5ltid-i-frit-fald.pdf)

## KAPITEL 1 - SPIS SOM DIN OLDEMOR

Overordnet kilde og researcher:

Svend Aage Christensen. Historiker, forsker emeritus.

Interview:

Yu Fu. Professor, forskningschef i fødevidenskab på Southwest University i Kina. Tidligere Aarhus Universitet og Københavns Universitet.

Suppe som terapeutisk ret

<https://theconversation.com/can-chicken-soup-really-cure-body-and-soul-52357>

Suppe i jægerstenalderen

Nourishing Broth: An Old-Fashioned Remedy for the Modern World

<https://www.amazon.com/Nourishing-Broth-Old-Fashioned-Remedy-Modern/dp/1455529222>

Kineserne kogte for over 2500 år siden en særlig bouillon, som de mente at kunne styrke nyrer og fordøjelse.

BBC: Chinese archaeologists unearth 2,400-year-old 'soup'

<https://www.bbc.com/news/world-asia-pacific-11981666>

<https://museum-of-artifacts.blogspot.com/2015/10/chinese-2400-year-old-pot-of-soup-found.html>

Hippokrates (460-370 f.Kr) ordinerede suppe mod en række sygdomme.

Laurence Totelin. Journal of Ethnopharmacology 2015

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4469375/>

Hippocrates of Kos, the father of clinical medicine, and Asclepiades of Bithynia, the father of molecular medicine. Review. Yapijakis C.

<https://www.ncbi.nlm.nih.gov/pubmed/19567383>

Sort suppe i den græske bystat Sparta

[https://en.wikipedia.org/wiki/Black\\_soup](https://en.wikipedia.org/wiki/Black_soup)

When Feeding the Troops, Flavor is Rarely on the Menu

<https://www.nationalgeographic.com/culture/food/the-plate/2015/03/04/feeding-the-troops/>

Maimonides

- Fred Rosner: The Medical Legacy of Moses Maimonides

- Moses Maimonides on the Causes of Symptoms. British Medical Journal

1975:

<https://www.bmj.com/content/3/5978/314.1>

Therapeutic Efficacy of Chicken Soup. Chest, 78. 4. oktober 1980

[https://journal.chestnet.org/article/S0012-3692\(16\)40246-1/pdf](https://journal.chestnet.org/article/S0012-3692(16)40246-1/pdf)



"Good broth can resurrect the dead"

Dr. Kevin Lau. Your Plan for Natural Scoliosis Prevention and Treatment  
(gengives også mange andre steder, men umiddelbart ikke muligt at påvise en  
tilsyneladende originalkilde)

Ordet 'restaurer'

<https://jimmcneill.wordpress.com/2011/06/14/restaurant-%E2%80%93-funny-word-that-%E2%80%93-whats-its-origins/>

Napoleon: "Det er suppen, der skaber soldaten".

- <http://researchingfoodhistory.blogspot.com/2014/11/soup-makes-soldier.html>

- Joseph-Romain-Louis de Kirckhoff: Hygiène Militaire, a l'usage des Armées de Terre, 1823, side 109

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5612074/>

- Den nærende suppe, der skulle fyre op under hans krigere, blev kogt i mindst seks timer på skeletdelene fra gårsdagens måltider, typisk okse, kalv eller får, eller i mangel af bedre hest.

Hygiène Militaire, a l'usage des Armées de Terre,

[https://books.google.dk/books?id=b8tEAAAACAAJ&pg=PP5&lpg=PP5&dq=hygiene+militaire,+a+l%27usage+des+armees+de+terre&source=bl&ots=ZFuv5D6xs0&sig=ACfU3U0PtIM5yuTNjh-](https://books.google.dk/books?id=b8tEAAAACAAJ&pg=PP5&lpg=PP5&dq=hygiene+militaire,+a+l%27usage+des+armees+de+terre&source=bl&ots=ZFuv5D6xs0&sig=ACfU3U0PtIM5yuTNjh-0VVkh6QO12gXS6A&hl=en&sa=X&ved=2ahUKewjnj_mUgdbmAhUMTsAKHRdIDV0Q6AEwAnoECAgQAQ#v=onepage&q=hygiene%20militaire%2C%20a%20usage%20des%20armees%20de%20terre&f=false)

[0VVkh6QO12gXS6A&hl=en&sa=X&ved=2ahUKewjnj\\_mUgdbmAhUMTsAKHRdIDV0Q6AEwAnoECAgQAQ#v=onepage&q=hygiene%20militaire%2C%20a%20usage%20des%20armees%20de%20terre&f=false](https://books.google.dk/books?id=b8tEAAAACAAJ&pg=PP5&lpg=PP5&dq=hygiene+militaire,+a+l%27usage+des+armees+de+terre&source=bl&ots=ZFuv5D6xs0&sig=ACfU3U0PtIM5yuTNjh-0VVkh6QO12gXS6A&hl=en&sa=X&ved=2ahUKewjnj_mUgdbmAhUMTsAKHRdIDV0Q6AEwAnoECAgQAQ#v=onepage&q=hygiene%20militaire%2C%20a%20usage%20des%20armees%20de%20terre&f=false)

- Franske soldater anså bouillonterninger for at være langt under deres værdighed. Napoleon's Infantry Handbook af Terry Crowdy, side 228-229 og 231

[https://books.google.dk/books?id=bOeZBgAAQBAJ&pg=PA231&lpg=PA231&q=napoleon+bone+broth&source=bl&ots=eOsJcSV\\_o\\_&sig=ACfU3U2OIE-MjM8HPR7PaKD0K7XIowql7w&hl=en&sa=X&ved=2ahUKewj35uvU6ITkAhV6wAIHHS-](https://books.google.dk/books?id=bOeZBgAAQBAJ&pg=PA231&lpg=PA231&q=napoleon+bone+broth&source=bl&ots=eOsJcSV_o_&sig=ACfU3U2OIE-MjM8HPR7PaKD0K7XIowql7w&hl=en&sa=X&ved=2ahUKewj35uvU6ITkAhV6wAIHHS-jCVEQ6AEwEHoECA0QAQ#v=onepage&q=napoleon%20bone%20broth&f=false)

[jCVEQ6AEwEHoECA0QAQ#v=onepage&q=napoleon%20bone%20broth&f=false](https://books.google.dk/books?id=bOeZBgAAQBAJ&pg=PA231&lpg=PA231&q=napoleon+bone+broth&source=bl&ots=eOsJcSV_o_&sig=ACfU3U2OIE-MjM8HPR7PaKD0K7XIowql7w&hl=en&sa=X&ved=2ahUKewj35uvU6ITkAhV6wAIHHS-jCVEQ6AEwEHoECA0QAQ#v=onepage&q=napoleon%20bone%20broth&f=false)

- National Public Radio.

<https://www.npr.org/sections/thesalt/2015/06/18/414614705/appetite-for-war-what-napoleon-and-his-men-ate-on-the-march>

- Soldaterne havde krav på to suppemåltiderne om dagen ifølge et regulativ af 1. juli 1788. Napoleon's Infantry Handbook - page 228

- Arkæologiske analyser af bl.a. collagenindholdet i knoglerne fra franske soldater i en massegrav ved Vilnius i Litauen

Stable isotope evidence for the geographic origins and military movement of Napoleonic soldiers during the march from Moscow in 1812.

[https://www.researchgate.net/publication/228788135\\_Discovery\\_of\\_a\\_mass\\_grave\\_of\\_Napoleonic\\_period\\_in\\_Lithuania\\_1812\\_Vilnius](https://www.researchgate.net/publication/228788135_Discovery_of_a_mass_grave_of_Napoleonic_period_in_Lithuania_1812_Vilnius)

## COLLAGENPIONERERNE

### DENIS PAPIN

Papins Digestor blev beskrevet af Denis Papin selv i en bog fra 1681 og i en medicinsk doktorafhandling i Basel i 1769.

<https://wellcomecollection.org/works/fncem3dg/items?canvas=3&sierraId=b30375587>

Tegninger af Papins kedel hen mod slutningen af disputatsen på

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<https://wellcomecollection.org/works/fncem3dg/items?canvas=71&sierraId=b30375587>

-

<https://wellcomecollection.org/works/fncem3dg/items?canvas=73&sierraId=b30375587>

Papins egen bog

- <https://twitter.com/sciencemuseum/status/899980742775713793?lang=ca>

- [https://commons.wikimedia.org/wiki/File:Papin%27s\\_digestor\\_-\\_the\\_first\\_form\\_of\\_pressure\\_cooker.\\_Wellcome\\_M0011059.jpg](https://commons.wikimedia.org/wiki/File:Papin%27s_digestor_-_the_first_form_of_pressure_cooker._Wellcome_M0011059.jpg)

- Engelsk titel på bog: A new digester or engine for softening bones, containing the description of its make and use in these particulars: viz, cookery, voyages at sea, confectionary, making of drinks, chymistry, and dying. With an account of the price a good big engine will cost, and of the profit it will afford.

<https://archive.org/details/b30330245/page/n11>

### DOMINIQUE JEAN LARREY

- [https://en.wikipedia.org/wiki/Dominique\\_Jean\\_Larrey](https://en.wikipedia.org/wiki/Dominique_Jean_Larrey)

-

[https://books.google.dk/books?id=0D8UAAAAQAAJ&pg=PA281&dq=Dominique+Jean\\_Larrey+bouillon&hl=en&sa=X&ved=0ahUKEwjJ39z0j9rmAhWIJFAKHSpFDzUQ6AEIKzAA#v=onepage&q=Dominique-Jean\\_Larrey%20bouillon&f=false](https://books.google.dk/books?id=0D8UAAAAQAAJ&pg=PA281&dq=Dominique+Jean_Larrey+bouillon&hl=en&sa=X&ved=0ahUKEwjJ39z0j9rmAhWIJFAKHSpFDzUQ6AEIKzAA#v=onepage&q=Dominique-Jean_Larrey%20bouillon&f=false)

-

[https://books.google.dk/books?id=RBC\\_AAAAcAAJ&pg=PA91&dq=Dominique-Jean\\_Larrey+bouillon&hl=en&sa=X&ved=0ahUKEwitwPi9kNrmAhVCLVAKHWCVByUQ6wEIOTAB#v=onepage&q=Dominique-Jean\\_Larrey%20bouillon&f=false](https://books.google.dk/books?id=RBC_AAAAcAAJ&pg=PA91&dq=Dominique-Jean_Larrey+bouillon&hl=en&sa=X&ved=0ahUKEwitwPi9kNrmAhVCLVAKHWCVByUQ6wEIOTAB#v=onepage&q=Dominique-Jean_Larrey%20bouillon&f=false)

- Surgical Clinics from Military Camps and Hospitals mellem 1792 og 1829, col. 10, chez gabon, Paris, 1829 - muligvis den samme som Mémoires de chirurgie militaire et histoire de ses sumpagnes, vol. 3, Paris 1812?

- Bibliothek for Læger - redigeret af C. Otto - side 234. Det Classenske Litteraturselskab, København, 1821. I google-søgningen står der: "Larrey lader først sine egne Luksusheste slagte og derpaa nogle af stabsofficerne og koger suppe på Kødet i ...."

- Archiv for historie og geographie - side 234

"Hr. Larray i særdeleshed var fortrinlig. Efter at have opereret alle de sårede af garden, som var sammenhobede på øen Lobau, spurgte han, om der var noget suppe, man kunne give dem. Nej, svarede hans hjælpere. Så må der laves, sagde han idet han pegede på adskillige heste i nærheden af ham. Tag hestene, som er ved denne Piquet. Disse heste tilhørte en general. Da man nærmede sig for at adlyde hr. Larray, bliver ejeren rasende, skriger og bander på, at han ikke vil lade dem tage dem bort. Nej vel, så tag mine, sagde den brave kirurg. Slagt dem, og lad mine kammerater få suppe.

- The Edinburgh Medical and Surgical Journal, side 217

<https://books.google.dk/books?id=aMNOAAAACAAJ&pg=PA217&lpg=PA217&dq=Larrey+bone+soup&source=bl&ots=eR7cmUh9CP&sig=ACfU3U1KUL6KKBJQzClwehd66Af6F3YpWQ&hl=en&sa=X&ved=2ahUKEwiam6jnh9rmAhXKPFAXHTYtAS0Q6AEwHXoECACQAQ#v=onepage&q=Larrey%20bone%20soup&f=false>

<https://archive.org/details/militarymedicine42asso/page/n4>

#### ANTOINE-ALEXIS CADET DE VAUX (1743-1828)

Hans egen bog: De la gélatine des os et de son bouillon, précédée de considérations sur le vice du régime alimentaire des classes populeuses.

<https://gallica.bnf.fr/ark:/12148/bpt6k9644828f/f9.item.r=soupe>

Consumers and Luxury: Consumer Culture in Europe 1650-1850 side 175

[https://books.google.dk/books?id=7n27AAAAIAAJ&pg=PA175&lpg=PA175&dq=cadet+de+vaux+soup&source=bl&ots=rZo-](https://books.google.dk/books?id=7n27AAAAIAAJ&pg=PA175&lpg=PA175&dq=cadet+de+vaux+soup&source=bl&ots=rZo-0gvTJH&sig=ACfU3U3APv0bNYvTTkmZpJ3yIYwQrTCACw&hl=en&sa=X&ved=2ahUKEwjpnqXendrmAhWKAIAKHcHZDyYQ6AEwAHoECAYQAQ#v=onepage&q=cadet%20de%20vaux%20soup&f=false)

[0gvTJH&sig=ACfU3U3APv0bNYvTTkmZpJ3yIYwQrTCACw&hl=en&sa=X&ved=2ahUKEwjpnqXendrmAhWKAIAKHcHZDyYQ6AEwAHoECAYQAQ#v=onepage&q=cadet%20de%20vaux%20soup&f=false](https://books.google.dk/books?id=7n27AAAAIAAJ&pg=PA175&lpg=PA175&dq=cadet+de+vaux+soup&source=bl&ots=rZo-0gvTJH&sig=ACfU3U3APv0bNYvTTkmZpJ3yIYwQrTCACw&hl=en&sa=X&ved=2ahUKEwjpnqXendrmAhWKAIAKHcHZDyYQ6AEwAHoECAYQAQ#v=onepage&q=cadet%20de%20vaux%20soup&f=false)

[https://books.google.dk/books?id=M\\_NdAAAACAAJ&pg=PA190&lpg=PA190&dq=cadet+de+baur+suppe+knochen&source=bl&ots=etWu9QP-](https://books.google.dk/books?id=M_NdAAAACAAJ&pg=PA190&lpg=PA190&dq=cadet+de+baur+suppe+knochen&source=bl&ots=etWu9QP-Sd&sig=ACfU3U2O1oaMmsrIEx15WqWgqIUBfCISQ&hl=en&sa=X&ved=2ahUKEwjV96CyodrmAhVKb1AKHbpWCjMQ6AEwCnoECACQAQ#v=onepage&q=cadet%20de%20baur%20suppe%20knochen&f=false)

[Sd&sig=ACfU3U2O1oaMmsrIEx15WqWgqIUBfCISQ&hl=en&sa=X&ved=2ahUKEwjV96CyodrmAhVKb1AKHbpWCjMQ6AEwCnoECACQAQ#v=onepage&q=cadet%20de%20baur%20suppe%20knochen&f=false](https://books.google.dk/books?id=M_NdAAAACAAJ&pg=PA190&lpg=PA190&dq=cadet+de+baur+suppe+knochen&source=bl&ots=etWu9QP-Sd&sig=ACfU3U2O1oaMmsrIEx15WqWgqIUBfCISQ&hl=en&sa=X&ved=2ahUKEwjV96CyodrmAhVKb1AKHbpWCjMQ6AEwCnoECACQAQ#v=onepage&q=cadet%20de%20baur%20suppe%20knochen&f=false)

[https://books.google.dk/books?id=ESgTAAAYAAJ&pg=PA361&lpg=PA361&dq=cadet+de+baur+knochen&source=bl&ots=Y9-](https://books.google.dk/books?id=ESgTAAAYAAJ&pg=PA361&lpg=PA361&dq=cadet+de+baur+knochen&source=bl&ots=Y9-T82MRSn&sig=ACfU3U3sSCu92p6AyWjEbdwgCGRvqKr6fQ&hl=en&sa=X&ved=2ahUKEwjcutKrotrmAhUIJIAKHTgsBTEQ6AEwC3oECAQQAQ#v=onepage&q=cadet%20de%20baur%20knochen&f=false)

[T82MRSn&sig=ACfU3U3sSCu92p6AyWjEbdwgCGRvqKr6fQ&hl=en&sa=X&ved=2ahUKEwjcutKrotrmAhUIJIAKHTgsBTEQ6AEwC3oECAQQAQ#v=onepage&q=cadet%20de%20baur%20knochen&f=false](https://books.google.dk/books?id=ESgTAAAYAAJ&pg=PA361&lpg=PA361&dq=cadet+de+baur+knochen&source=bl&ots=Y9-T82MRSn&sig=ACfU3U3sSCu92p6AyWjEbdwgCGRvqKr6fQ&hl=en&sa=X&ved=2ahUKEwjcutKrotrmAhUIJIAKHTgsBTEQ6AEwC3oECAQQAQ#v=onepage&q=cadet%20de%20baur%20knochen&f=false)

Joke om eget skelet: Consumers and Luxury: Consumer Culture in Europe 1650-1850 - side 175

[https://books.google.dk/books?id=7n27AAAAIAAJ&pg=PA175&lpg=PA175&dq=when+I+have+remained+some+years+as+a+skeleton+cadet+de+vaux&source=bl&ots=rZpV-](https://books.google.dk/books?id=7n27AAAAIAAJ&pg=PA175&lpg=PA175&dq=when+I+have+remained+some+years+as+a+skeleton+cadet+de+vaux&source=bl&ots=rZpV-iAXII&sig=ACfU3U2Mf64B4PY4tYqr6QMdVHu4ii0Dtg&hl=en&sa=X&ved=2ahUKEwjZtt_6vMznAhVC6qQKHf3CB5MQ6AEwAHoECAkQAQ#v=onepage&q=when)

[iAXII&sig=ACfU3U2Mf64B4PY4tYqr6QMdVHu4ii0Dtg&hl=en&sa=X&ved=2ahUKEwjZtt\\_6vMznAhVC6qQKHf3CB5MQ6AEwAHoECAkQAQ#v=onepage&q=when](https://books.google.dk/books?id=7n27AAAAIAAJ&pg=PA175&lpg=PA175&dq=when+I+have+remained+some+years+as+a+skeleton+cadet+de+vaux&source=bl&ots=rZpV-iAXII&sig=ACfU3U2Mf64B4PY4tYqr6QMdVHu4ii0Dtg&hl=en&sa=X&ved=2ahUKEwjZtt_6vMznAhVC6qQKHf3CB5MQ6AEwAHoECAkQAQ#v=onepage&q=when)

%20I%20have%20remained%20some%20years%20as%20a%20skeleton%20cadet%20de%20vaux&f=false

BENJAMIN THOMSON, alias grev Rumford (1753-1814).

<https://de.wikipedia.org/wiki/Rumfordsuppe>

Supper til bespisning af fattige og fanger i 1800-tallet. Knud Waaben: Den Rumfordske suppe.

<https://bibliotek.dk/da/work/870971-tsart:82759204>

Professor Wendt skrev i 1828 en afhandling på godt 100 sider. En hel lille kultur- og ernæringshistorisk gennemgang af bensuppernes historie - især behandles den Rumfordske suppes historie i udlandet og i Danmark.

<https://books.google.dk/books?id=Ft0wS8z37T8C&printsec=frontcover&hl=da#v=onepage&q&f=false>

CARL GOTTLOB RAFN (1769-1808) og ERIK NISSEN VIBORG (1759-1822)

Rafns bog: Suppe og Gelée af Been, en Gave for den huuslige Oeconomie, samt nye Efterretninger om Brugen af det ypperlige Hestekjød

[https://soeg.kb.dk/discovery/fulldisplay?context=L&vid=45KBDK\\_KGL:KGL&search\\_scope=MyInst\\_and\\_CI&tab=Everything&docid=alma99122848780605763&lang=da](https://soeg.kb.dk/discovery/fulldisplay?context=L&vid=45KBDK_KGL:KGL&search_scope=MyInst_and_CI&tab=Everything&docid=alma99122848780605763&lang=da)

Biografi om professor Erik Viborg af Hj. Friis: Erik Viborg i Dansk Biografisk Leksikon, 3. udg., Gyldendal 1979-84. Hentet 21. december 2019 fra <http://denstoredanske.dk/index.php?sideId=298995>

I tysk tobindsoversigt fra 1811 over velgørende institutioner i Augsburg er der i bind 2, side 746 en stor fodnote med omtale af professor Wiborgs og ass.

Rafns beregninger over, hvor meget man kunne vinde i den nationale husholdning ved at koge suppe på ben. Link i Googles digitalisering:

<https://books.google.dk/books?id=zUVrXDpQZcgC&pg=PA746&lpg=PA746&dq=wiborg+kastellet&source=bl&ots=2mK43fj8Pa&sig=ACfU3U0GkdoyYyKsu5C2HbXpnt0Yc1Jxmw&hl=da&sa=X&ved=2ahUKEwisoOf-2NbmAhXUnVwKHff2BwEQ6AEwFXoECCIQAQ#v=onepage&q=wiborg%20kastellet&f=false>

[http://www2.statsbiblioteket.dk/mediestream/avis/record/doms\\_avis\\_page%3Auuid%3A5a777212-dcaa-4939-9985-1e6a05e4b5c7](http://www2.statsbiblioteket.dk/mediestream/avis/record/doms_avis_page%3Auuid%3A5a777212-dcaa-4939-9985-1e6a05e4b5c7)

HEINRICH CALLISEN (1740-1824) (ikke anvendt i Collagen-bogen, men relevant)

<https://www.kobenhavnshistorie.dk/index.php/e-boger/24-bog/pmbok/160-indholdsoversigt-h-callisen-physisk-medizinske-betragtninger-over-ki-benhavn>

[https://da.wikipedia.org/wiki/Henrich\\_Callisen](https://da.wikipedia.org/wiki/Henrich_Callisen)

JØRGEN HENRICH RAWERT (1751-1823)

[https://soeg.kb.dk/discovery/fulldisplay?docid=alma99122848939205763&context=L&vid=45KBDK\\_KGL:KGL&lang=da&search\\_scope=MyInst\\_and\\_CI&adaptor=Local%20Search%20Engine&tab=Everything&query=creator,contains,Rawert,AND&query=title,contains,Knokler,AND&mode=advanced&offset=0](https://soeg.kb.dk/discovery/fulldisplay?docid=alma99122848939205763&context=L&vid=45KBDK_KGL:KGL&lang=da&search_scope=MyInst_and_CI&adaptor=Local%20Search%20Engine&tab=Everything&query=creator,contains,Rawert,AND&query=title,contains,Knokler,AND&mode=advanced&offset=0)

[https://da.wikipedia.org/wiki/J.H.\\_Rawert](https://da.wikipedia.org/wiki/J.H._Rawert)

Danmark fjerdestørste eksportør af biprodukter til Kina  
Interview Landbrug & Fødevarer

Biprodukter:

Exploration of collagen recovered from animal by-products as a precursor of bioactive peptides: Successes and challenges. Critical Reviews in Food Science and Nutrition, Volume 59, 2019, issue 13

Yu Fu, Margrethe Therkildsen, Rotimi E. Aluko & René Lametsch

<https://www.tandfonline.com/doi/abs/10.1080/10408398.2018.1436038>

## COLLAGEN-TIDSLINJE

400.000 f.Kr.: Knogle-gemmeleg til magre tider

- Ancient humans planned ahead and stored bones to eat the marrow later

<https://www.newscientist.com/article/2219435-ancient-humans-planned-ahead-and-stored-bones-to-eat-the-marrow-later/>

- Bone marrow storage and delayed consumption at Middle Pleistocene Qesem Cave, Israel (420 to 200 ka)

<https://advances.sciencemag.org/content/5/10/eaav9822>

- Study finds prehistoric humans ate bone marrow like canned soup 400,000 years ago

<https://popular-archaeology.com/article/study-finds-prehistoric-humans-ate-bone-marrow-like-canned-soup-400000-years-ago/>

- Ancient humans planned ahead and stored bones to eat the marrow later

<https://www.timesofisrael.com/archaeologists-discover-400000-year-old-paleo-snack-pack-in-israeli-cave/>

- Evidence for Meat-Eating by Early Humans  
<https://www.nature.com/scitable/knowledge/library/evidence-for-meat-eating-by-early-humans-103874273/>

18.000 f.Kr.: Arkæologiske fund i Kina af vandtætte kogekar, som formentlig er blevet brugt til at koge suppe i.  
Science 2012: Early pottery at 20,000 years ago in Xianrendong Cave, China  
<https://science.sciencemag.org/content/336/6089/1696>

8300 f.Kr.: Collagen brugt som lim. Archaeology  
<https://archive.archaeology.org/online/news/glue.html>

Ca. 3000 f.Kr.: Indiske ayurveda-læger ordinerer bl.a. supper og gryderetter  
Foundation of Innovative Research, Sustainable Technology & Intellectual Property:

<http://firstip.org/legendary-scientists/acharya-charak-father-of-medicine-300bc>

- Meat Use In Ayurveda: This Holistic Science Is Not Vegetarian Or Vegan  
<https://www.theayurvedaexperience.com/blog/meat-ayurveda-vegetarian-vegan/>

- Ayurvedic Concept of Food and Nutrition. Journal of Nutrition & Food Sciences 2016  
<https://www.longdom.org/open-access/ayurvedic-concept-of-food-and-nutrition-2155-9600-1000530.pdf>

Ca. 2570 f.Kr.: Gelatinemad i Giza-området i Ægypten.

- Let Them Eat Soup

<https://www.archaeology.org/issues/317-1811/trenches/7056-trenches-egypt-giza-livestock-bones>

- Ancient Egyptian Cuisine

[https://en.wikipedia.org/wiki/Ancient\\_Egyptian\\_cuisine#cite\\_note-autogenerated211-12](https://en.wikipedia.org/wiki/Ancient_Egyptian_cuisine#cite_note-autogenerated211-12)

1500-1000 f.Kr.: Lim i Ægypten og forfængelige, vegetariske ægyptere  
[https://en.wikipedia.org/wiki/Animal\\_glue](https://en.wikipedia.org/wiki/Animal_glue)

Ca. 480-370 f.Kr.: Hippokrates (460-370 f.Kr) ordinerer suppe mod en række sygdomme.

- Totelin. Journal of Ethnopharmacology 2015

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4469375/>

- Yapijakis C. Hippocrates of Kos, the father of clinical medicine, and Asclepiades of Bithynia, the father of molecular medicine. Review.

<https://www.ncbi.nlm.nih.gov/pubmed/19567383>

- I den græske krigerbystat Sparta kogte man en helt speciel sort suppe på svineben

[https://en.wikipedia.org/wiki/Black\\_soup](https://en.wikipedia.org/wiki/Black_soup)

221 f.Kr.-220 e.Kr.

Æselskindstonic - se senere kildeliste om æsler

200 f. kr.: Kinesere kogte bouillon

- BBC: Chinese archaeologists unearth 2,400-year-old 'soup'

<https://www.bbc.com/news/world-asia-pacific-11981666>

- <https://museum-of-artifacts.blogspot.com/2015/10/chinese-2400-year-old-pot-of-soup-found.html>

- Can chicken soup really cure body and soul?

<https://theconversation.com/can-chicken-soup-really-cure-body-and-soul-52357>

- Encyclopedia of Jewish Food

[https://books.google.dk/books?id=gFK\\_yx7Ps7cC&pg=PT418&lpg=PT418&dq=Huangdi+Neijing+chicken+soup&source=bl&ots=b\\_Bp3EyX5g&sig=ACfU3U2N7Nx0qAr8q272jBBYt2x1CIJPng&hl=en&sa=X&ved=2ahUKEwjI96Tzv9rmAhXFzKQKHvYBW0Q6AEwCXoECAgQAQ#v=onepage&q=Huangdi%20Neijing%20chicken%20soup&f=false](https://books.google.dk/books?id=gFK_yx7Ps7cC&pg=PT418&lpg=PT418&dq=Huangdi+Neijing+chicken+soup&source=bl&ots=b_Bp3EyX5g&sig=ACfU3U2N7Nx0qAr8q272jBBYt2x1CIJPng&hl=en&sa=X&ved=2ahUKEwjI96Tzv9rmAhXFzKQKHvYBW0Q6AEwCXoECAgQAQ#v=onepage&q=Huangdi%20Neijing%20chicken%20soup&f=false)

2. århundrede før vor tidsregning: Første nedskrevne tekst om hønssekødsuppe og dens helende virkninger findes i Huang Di Nei Jing, en bog om kinesisk folkemedicin. Det fremgår, at suppen var såkaldt yang-mad, dvs. varmende mad, og også kunne bruges til at opløse medicinske urter i, så den kunne skræddersys som behandling af mange sygdomme.

Ca. 1155: Hildegard von Bingen's Physica: The Complete English Translation of Her Classic Work on Health and Healing.

<https://books.google.dk/books?id=plwoDwAAQBAJ&pg=PT246&lpg=PT246&dq=hildegard+von+bingen+joints+ox+feet&source=bl&ots=8j1rrNP9Zj&sig=ACfU3U18SDs1OcrjRj5rh6Naf7WnDkomww&hl=en&sa=X&ved=2ahUKEwi80cmr3-TmAhXPQ0EAHc6EBugQ6AEwAXoECAkQAQ#v=onepage&q=hildegard%20von%20bingen%20joints%20ox%20feet&f=false>

- Nourishing Broth: An Old-Fashioned Remedy for the Modern World. Sally Fallon Morell, Kaayla T. Daniel

Sidst i 1100-tallet: Maimonides

Moses Maimonides on the Causes of Symptoms. British Medical Journal 1975.

<https://www.bmj.com/content/3/5978/314.1>

1400-tallet: Ældste opskrifter på "jellies" - gelatinebaserede retter, kogt på griseører, græsetæer eller ål.

<https://www.history.com/news/jiggle-it-the-history-of-gelatins-aspics-and-jellies>

Mexicanske kannibaler. National Geographic

<https://www.nationalgeographic.com/news/2011/11/110930-cannibalism-cannibals-mexico-xiximes-human-bones-science/>

1682: Den franske matematiker Denis Papin opfinder en maskine, en forløber for trykkogeren, der effektivt trækker gelatine ud af dyreknogler.

(se Papin-kilder ovenfor i pioner-afsnittet)

17. århundrede: Den engelske madskribent Anne Blencowe (1656-1718) omtaler i sin kogebog "Receipts" en teknik til at koge kød ned til en klæbrig substans, der kunne bruges som en forløber for bouillonterninger.

[https://en.wikipedia.org/wiki/Anne\\_Blencowe](https://en.wikipedia.org/wiki/Anne_Blencowe)

[https://en.wikipedia.org/wiki/Bouillon\\_cube#cite\\_note-2](https://en.wikipedia.org/wiki/Bouillon_cube#cite_note-2)

1735: Bouillonterninger almindelig kendt

[https://en.wikipedia.org/wiki/Bouillon\\_cube#cite\\_note-2](https://en.wikipedia.org/wiki/Bouillon_cube#cite_note-2)

<https://samvirke.dk/artikler/10-ting-du-maaske-ikke-vidste-om-bouillon>

1788: I følge fransk lov får soldater ret til to måltider med suppe hver dag, kogt på kød/knogler. I praksis havde hæren dog for lidt kød til det, så de fleste fik én gang kødsuppe og en gang grøntsagssuppe med spæk.

[https://books.google.dk/books?id=F0NoAgAAQBAJ&pg=PA17&lpg=PA17&dq=La+soupe+fait+le+soldat+napoleon&source=bl&ots=sOrhHFwQ\\_k&sig=ACfU3U0bl9NjJQXc4hc0A4dISZIQLMMt7g&hl=en&sa=X&ved=2ahUKEwj8zaGs\\_9XmA hXjmFwKHZXiBB0Q6AEwBXoECAoQAQ#v=onepage&q=La%20soupe%20fait%20le%20soldat%20napoleon&f=false](https://books.google.dk/books?id=F0NoAgAAQBAJ&pg=PA17&lpg=PA17&dq=La+soupe+fait+le+soldat+napoleon&source=bl&ots=sOrhHFwQ_k&sig=ACfU3U0bl9NjJQXc4hc0A4dISZIQLMMt7g&hl=en&sa=X&ved=2ahUKEwj8zaGs_9XmA hXjmFwKHZXiBB0Q6AEwBXoECAoQAQ#v=onepage&q=La%20soupe%20fait%20le%20soldat%20napoleon&f=false)

1793: Studier af hunde, der gnasker kødben, inspirerer den franske apoteker, kemiprofessor og iværksætter Cadet de Vaux til at lovprise knogleudvundet gelatine.

Mémoire sur la gelatine des os et son application à l'économie alimentaire, privée et publique, et principalement à l'économie de l'homme malade et indigent. Antoine-Alexis Cadet-de-Vaux. 1793

[https://books.google.dk/books/about/M%C3%A9moire\\_sur\\_la\\_gelatine\\_des\\_os\\_et\\_son\\_a.html?id=ssQPAAAAQAAJ&redir\\_esc=y](https://books.google.dk/books/about/M%C3%A9moire_sur_la_gelatine_des_os_et_son_a.html?id=ssQPAAAAQAAJ&redir_esc=y)

1800: Det første franske suppekøkken uddeler 300 supper om dagen til fattige.

Une histoire politique de l'alimentation: Di paléolithique à nos jours (Paul Anés)

<https://books.google.dk/books?id=9vvgDAAAQBAJ&pg=PT320&dq=de+la+gelatine+des+os+et+de+son+bouillon+published&hl=en&sa=X&ved=0ahUKEwjy zda-5-TmA hUjIMUKHcZpCS0Q6AEILDAA#v=onepage&q&f=false>

1808: Jamaicanske slaver beordres til selv at sørge for deres mad. Det gør de bl.a. ved at tigge knoglerester hos deres herrer for at støde dem i småstykker og koge suppe på dem, i følge Rafn (se ovenfor). I følge 25. bind af encyclopædien opsamlede slaverne på Jamaica benene fra deres herres døre, stødte dem så fint som muligt og kogte dem med vand til en god suppe. Det var slavernes eget ansvar at få mad nok.

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<https://repository.upenn.edu/cgi/viewcontent.cgi?article=2823&context=edissertations>



- Congotay! Congotay! A Global History of Caribbean Food

[https://books.google.dk/books?id=XmTfBQAAQBAJ&pg=PA70&lpg=PA70&dq=slaves+jamaica+bones+soup&source=bl&ots=Pm\\_1AkYLzt&sig=ACfU3U2THvtddi1KkbC5cjTdnX1A\\_jY6Xg&hl=en&sa=X&ved=2ahUKEwigpJ6Z0dfmAhVIbIAKHX69Di0Q6AEwAHoECAyQAQ#v=onepage&q=slaves%20jamaica%20bones%20soup&f=false](https://books.google.dk/books?id=XmTfBQAAQBAJ&pg=PA70&lpg=PA70&dq=slaves+jamaica+bones+soup&source=bl&ots=Pm_1AkYLzt&sig=ACfU3U2THvtddi1KkbC5cjTdnX1A_jY6Xg&hl=en&sa=X&ved=2ahUKEwigpJ6Z0dfmAhVIbIAKHX69Di0Q6AEwAHoECAyQAQ#v=onepage&q=slaves%20jamaica%20bones%20soup&f=false)

1818: Første industrifremstillede gelatine.

Gelatine Handbook: Theory and Industrial Practice

<https://books.google.dk/books?id=QJHdXZLvF7cC&pg=PA3&lpg=PA3&dq=1818+first+gelatine&source=bl&ots=QPg16A8wLP&sig=ACfU3U0WxwoPKzfWiWECyfc9ckm5OyXVEQ&hl=en&sa=X&ved=2ahUKEwjDg8OI5djnAhVSKewKHQYVAnCQ6AEwCnoECAyQAQ#v=onepage&q=1818%20first%20gelatine&f=false>

1845: Peter Cooper, amerikansk forretningsmand, tager patent på pulveriseret gelatine.

<https://lemelson.mit.edu/resources/peter-cooper>

<https://www.nytimes.com/2010/06/27/nyregion/27FYI.html>

[https://en.wikipedia.org/wiki/Peter\\_Cooper](https://en.wikipedia.org/wiki/Peter_Cooper)

1853: Koleraepidemi i København

Gerda Bonderup: Kolera i 1800-tallet - med særlig henblik på Danmark

<https://www.google.com/search?q=kolera+k%C3%B8benhavn+suppe&oq=kolera+k%C3%B8benhavn+suppe&aqs=chrome..69i57j33.6632j0j4&sourceid=chrome&ie=UTF-8>

1871: Gelatine benyttes i andre industrier, bl.a. som lysfølsomt materiale i fotoindustrien.

[https://en.wikipedia.org/wiki/Photographic\\_film](https://en.wikipedia.org/wiki/Photographic_film)

1903: Franske køkkenchef George Auguste Escoffier udgiver bogen "Le Guide Culinaire"

1908: Første Maggi-terning ser dagens lys.

<https://en.wikipedia.org/wiki/Maggi>

1930-1955: Forskere kortlægger kollagens struktur

- U.S. National Library of Medicine

<https://profiles.nlm.nih.gov/spotlight/sc/catalog/nlm:nlmuid-101584582X393-doc>

- [https://en.wikipedia.org/wiki/Collagen\\_helix](https://en.wikipedia.org/wiki/Collagen_helix)

<https://science.sciencemag.org/content/82/2121/175.pdf-extract>

- Journal of the American Chemical Society (19). G.L. Clark, E.A. Parker, J.A. Schaad, W.J. Warren.

<https://pubs.acs.org/doi/abs/10.1021/ja01311a504>

- <https://www.news-medical.net/health/What-is-Collagen.aspx>

- <https://www.nature.com/articles/221914a0>

- <https://nutritionreview.org/2013/04/collagen-connection/>

- Wyckoff, R.; Corey, R. & Bischoff, J. (1935). "X-ray reflections of long spacing from tendon". *Science*. 82 (2121): 175-176. Bibcode:1935Sci....82..175W. doi:10.1126/science.82.2121.175. PMID 17810172.

- <https://www.thebetterindia.com/104428/gnr-science-collagen-research/>  
- International Union of Crystallography [First published in *Nature Structural Biology* (2001), 8, 489.]  
<https://www.iucr.org/people/crystallographers/g.-n.-ramachandran>

1947: Første industrielt fremstillede collagenpeptider i Europa  
<https://www.gelatine.org/gelatine/history.html>

1950: Klinisk studie finder, at gelatine får hvide pletter på neglene til at forsvinde på 13 uger.

Tyson TL, The effect of gelatin on fragile finger nails. *J Invest Dermatol* 14:323-325 (1950).  
[https://www.jidonline.org/article/S0022-202X\(15\)50492-2/pdf](https://www.jidonline.org/article/S0022-202X(15)50492-2/pdf)

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