



**Testimony of Sharon Treat, Institute for Agriculture and Trade Policy
In Support of LD 363 and LD 627,
“An Act Relating to the Statute of Limitations for Injuries or Harm Resulting from
Perfluoroalkyl and Polyfluoroalkyl Substances”
Maine Legislature Joint Standing Committee on Judiciary
March 17, 2021**

Senator Carney, Representative Harnett and honorable members of the Judiciary Committee. My name is Sharon Treat and I live in Hallowell. I am Senior Attorney for the Institute for Agriculture and Trade Policy (IATP), on whose behalf I am testifying today in support of LD 363 and LD 637, “An Act Relating to the Statute of Limitations for Injuries or Harm Resulting from Perfluoroalkyl and Polyfluoroalkyl Substances.”

IATP is a 501(c)(3) nonprofit headquartered in Minneapolis, Minnesota with offices in Hallowell, Maine and other locations. IATP works closely with farmers and seeks to promote local, sustainable and environmentally beneficial agriculture and trade policies.¹ We have been following PFAS issues both across the country and in Maine, and attended the meetings of Governor Mills’ PFAS Task Force and submitted detailed comments on the draft and final Task Force reports and legislation before this and other committees.²

Maine’s Statute of Limitations is out of date. It was conceived of without understanding chemicals with properties such as PFAS, which silently and invisibly contaminate soil, water, plants and livestock, bioaccumulate in food and in human bodies, move great distances through groundwater and persist for decades. Unlike the statutes of limitations in 37 other states, Maine’s law hasn’t been updated to clarify that it runs from the time the plaintiff discovers or reasonably should have discovered the harm or injury and the connection to the chemicals. Instead, the standard set forth in 14 MRSA §752, “within 6 years *after the cause of action accrues*,” is ambiguous text and somewhat circular text that could lead to further litigation in order to access the courts.

The mismatch between how PFAS acts in the real life environment, and the legal test set forth in Maine’s one-size-fits-all statute of limitations, is vividly illustrated by what’s going on in Fairfield and the neighboring communities of Benton and Unity Township. There, dozens of drinking water wells have been contaminated with off-the-chart levels of multiple PFAS

¹ IATP also has offices in Washington, D.C. and Berlin, Germany (IATP Europe). For over 30 years, IATP has provided research, analysis and advocacy on a wide range of agriculture-related issues including farm to school; climate; agroecology; soil health and water quality and access; farmworker health and economic security; and trade and market policies. For more information, see www.iatp.org.

² IATP’s PFAS materials are posted here: <https://www.iatp.org/and-polyfluoroalkyl-substances-pfas>

chemicals.³ The contamination was recently discovered only because the state Department of Agriculture, Conservation and Forestry began testing retail milk for PFAS last year and was able to trace a spike of PFAS in processed milk back to a Fairfield farm. The retail milk testing program, which remains limited, was instituted following discovery of PFAS contamination at an Arundel farm. Neither the farmer who spread sludge on farmland in the area nor the residents whose wells have been contaminated with PFAS knew that they were being exposed to high levels of this chemical until the milk was tested and traced back. Moreover — and this is critical for understanding the need for LD 363 and LD 627 and the “discovery rule” the legislation would establish — it is possible that this contamination was caused by sludge that was *spread in the area no more recently than 17 years ago*.⁴ In recent years, sludge has not been spread on fields in the area.

In other words, the affected residents don’t know when these wells first became contaminated with PFAS and they had no way to know of the contamination until alerted by the State. Further, the practice of spreading sludge on farmland was authorized by both state and federal governments, so neither farmers nor neighbors could be expected to be suspicious and order testing of their water for random chemicals. In this situation, Maine’s statute of limitations, with the ambiguous “accrue” language, could arbitrarily limit access to the courts and to compensation for those injured.

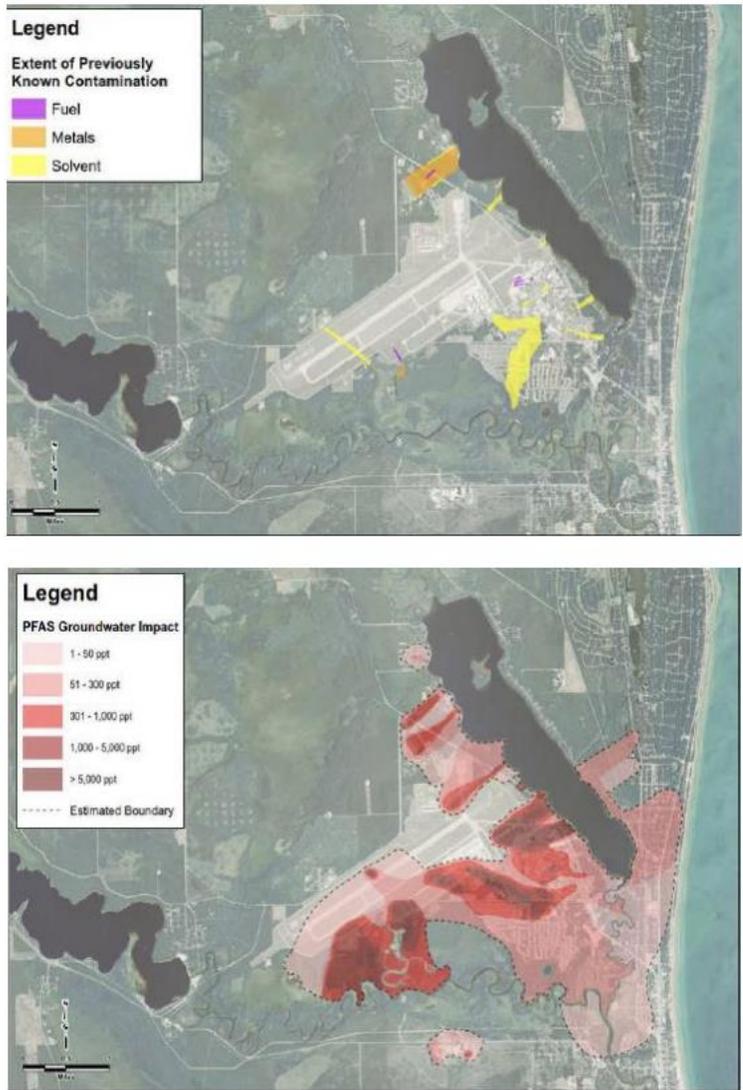
Besides being extraordinarily persistent — as demonstrated in the Fairfield contamination by the many years that have passed since these chemicals were likely introduced into the environment via sludge spreading — PFAS have other properties that make the discovery rule especially appropriate. They are extremely mobile, and can be found in high concentrations at great distances from where contamination first occurred. I recently participated in a legal course on PFAS presented by commercial real estate lawyers who illustrated these characteristics, and how PFAS differ from some other pollutants in this regard. I have included a screenshot of a slide from that course illustrating this. In the image on the next page, the top map shows how far solvents, metals and other pollutants traveled from the point of initial contamination at an airport (in yellow) compared to PFAS groundwater contamination at the same airport (in red). The PFAS has traveled far in groundwater from the airport footprint, and some of the highest concentrations (in dark red) are furthest away.⁵

³ The location and test results for these wells is posted on this interactive DEP website:

<https://maine.maps.arcgis.com/apps/webappviewer/index.html?id=2bb04142294948458c81b2ece1011c88>

⁴ Briefing on PFAS Task Force to the Environmental and Natural Resources Committee by David Burns, Director of DEP’s Bureau of Remediation and Waste Management, February 8, 2021

⁵ Slide used with permission from Leslie L. Nicholas, Senior Consultant, BBJ Group, LLC from her presentation “PFAS – Practical Considerations in Real Estate Transactions,” part of “The Forever Chemicals and Other Not-So-New Environmental Issues,” first presented September 30, 2020, ABA Section of Real Property, Trust & Estate Law

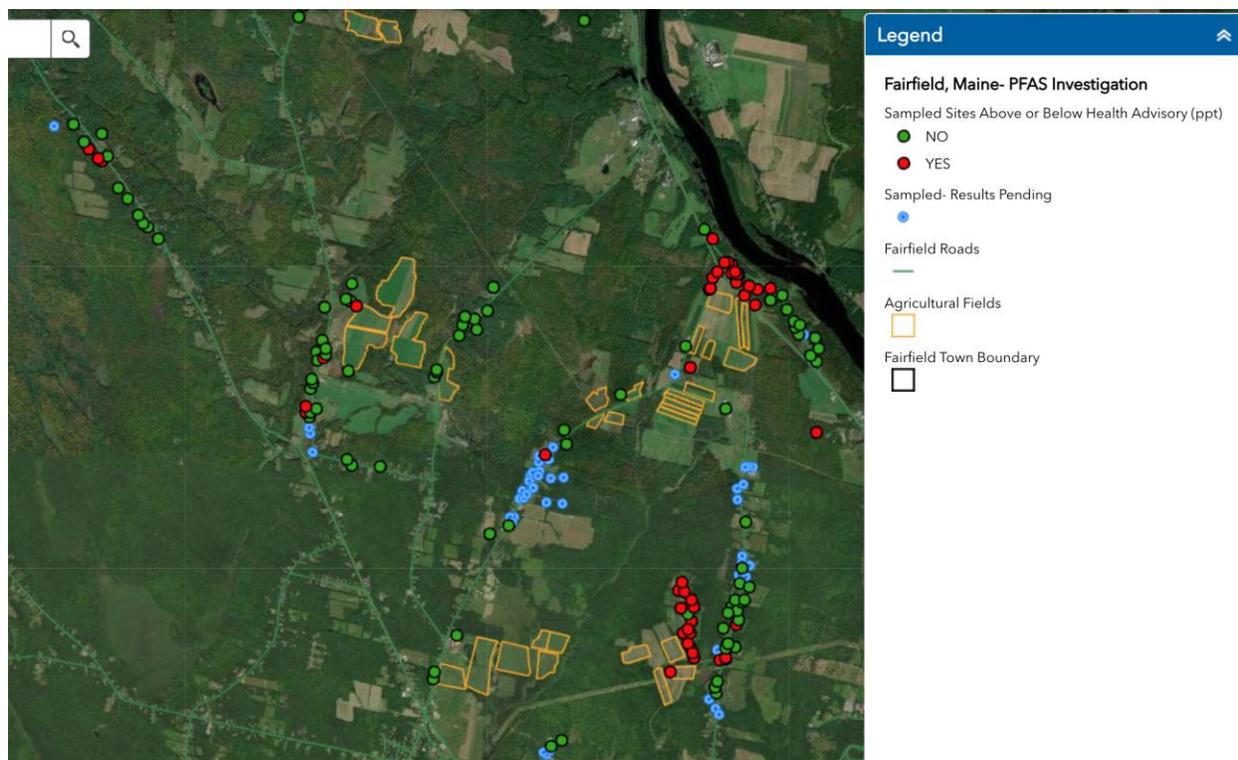


Source: MDEQ, Draft concentration maps, April 2017

This same dynamic is apparent in the Fairfield PFAS data that Maine DEP has collected for 29 drinking water wells.⁶ The DEP data is posted online in an interactive map, which shows where the agricultural fields are located and where the wells with the highest concentrations of various PFAS compounds have been measured. While many of the highest concentrations are in

⁶ <https://maine.maps.arcgis.com/apps/webappviewer/index.html?id=2bb04142294948458c81b2ece1011c88> (screenshot taken 3-11-21)

wells near these fields, it is also the case that some wells with high levels of contamination are situated far from those fields. I have shared a screenshot of the DEP map below.



It is important to recognize that the injury caused by PFAS contamination is already significant. Failure to fix Maine’s statute of limitations could result in a significant denial of justice. Two Maine farms have been forced to shutter their operations because of contamination from these toxic chemicals, the viability of their farms and livelihoods threatened by PFAS-contaminated beef and milk that is unsafe, inedible and unsaleable.

Harm from PFAS contamination is not limited to farms and farmers, and this bill will also help homeowners, municipalities, schools and others dealing with PFAS pollution. PFAS exposure has been linked to health problems including kidney and testicular cancer, thyroid disease, infertility and compromised immune systems — which means PFAS exposure can make people more susceptible to COVID-19 health consequences and may limit the effectiveness of vaccines. Indeed, recent research has found a strong association with PFAS exposure and COVID-19 severity, antibody response, and asthma.⁷

⁷ In one study, Pentafluorobenzoic acid (PFBA) -- one of several thousand compounds in the PFAS class of chemicals -- detected in plasma showed strong association with the severity of COVID-19. In tissue samples from autopsies, PFBA accumulated in the lungs. COVID-19 affects the functioning of the lungs, and the positive association of PFBA concentration and COVID-19 severity suggests that PFBA could be heightening the damage to the lungs from COVID-19. Research is also suggestive that PFAS exposure reduces the antibody response for

The scope of the PFAS contamination problem in Maine could be enormous. The true impact of PFAS contamination of food and drinking water, the environment and public health is not known. This group of man-made chemicals (as many as 5,000 variations) is ubiquitous. They are used in a wide variety of consumer products, including nonstick coatings on cookware and water- and grease-resistant coatings on food packaging, outerwear, and furniture, as well as in firefighting foams.⁸ Recently, it was discovered that PFAS are in some aerial pesticides.

Data collected by DEP and reported to the Task Force has found PFAS in fish caught in both rivers and lakes.⁹ In addition to families in Presque Isle whose water was contaminated with PFAS from sludge, residents in Houlton and a school in Trenton are dealing with PFAS contamination. Because PFAS pollution is both an ongoing and a legacy problem, what has been revealed so far may be just the tip of the iceberg. Data collected by the DEP has identified 500 properties where sludge was spread over the past 40 years, but testing at most of those sites is yet to be done. Who knows what housing or other development have been built on land that may be contaminated with PFAS? What about housing and schools located near one of the hundreds of closed municipal landfills throughout the state? The levels of groundwater contamination near some landfills are *similar to or exceed levels found at Superfund sites in Maine*.¹⁰

Mainers who experience health problems, property damage and economic ruin from PFAS contamination should have clear access to our courts to sort out the blame and assess liability for actions taken by manufacturers and other responsible parties. Taxpayer funding shouldn't be the first resort to pay for damage caused by these chemicals, where the manufacturers were well aware of the potential for harm decades past and have since discontinued production of

certain illnesses, raising concerns that PFAS may negatively affect the efficacy of the COVID-19 vaccines. For sources and additional information, please see the attached Appendix on COVID-19 and PFAS.

⁸ Managing PFAS in Maine, Final Report from the Maine PFAS Task Force, January 2020 at 4-6, <https://www.maine.gov/pfastaskforce/materials/report/PFAS-Task-Force-Report-FINAL-Jan2020.pdf>

⁹ Barry Mower, "PFAS in Maine water, sediment, and fish," Presented to Governor Mills' PFAS Task Force (September 25, 2019), <https://www.maine.gov/pfastaskforce/materials/20190925/BMower-presentation-PFAS-in-Maine.pdf>

¹⁰ Final Report from the Maine PFAS Task Force, Appendix C, PFAS Results Summary (January 2020). For example, In DEP's tests of drinking water wells near landfills (116 samples), the agency found maximum levels of 458 ng/l for PFOA, 120 ng/l for PFOS and 470 ng/l for combined PFOA + PFOS. Average results were also high; 46.0 ng/l for PFOA, 13.5 ng/l for PFOS and 52.5 ng/l for combined PFOA + PFOS. To put these data in perspective, New Hampshire has finalized drinking water standards intended to protect the most sensitive populations over a lifetime of exposure. The New Hampshire Maximum Contaminant Levels (MCLs) are: PFOA, 12 ppt; PFOS, 15 ppt; PFHxS, 18 ppt; and PFNA, 11 ppt. See, New Hampshire Department of Environmental Services, NHDES Proposes New PFAS Drinking Water Standards, Final Rulemaking Proposal for PFOA, PFOS, PFHxS and PFNA, June 28, 2019, <https://www.des.nh.gov/media/pr/2019/20190628-pfas-standards.htm> DEP's tests of groundwater near landfills showed even higher levels of PFAS contaminants. Groundwater results topped out at an astounding 3,050 ng/l for PFOA, 2700 ng/l for PFOS and 3095.1 ng/l for combined PFOA + PFOS. Even the average groundwater sample, out of about 46 samples for this category, found levels of 407.3 ng/l for PFOA, 204.1 ng/l for PFOS and 587 ng/l for combined PFOA + PFOS.

some of these compounds because of the harm they can cause. Unfortunately, the legacy of even discontinued PFAS formulations lives on, while newer PFAS compounds continue to be manufactured and remain ubiquitous in everyday consumer products. This is why a majority of the Governor's PFAS Task Force members endorsed clarifying Maine law as LD 363 and LD 627 would do.

Time is of the essence. We have already lost a year to the pandemic, so that even though similar legislation moved through this committee last year, the Legislature as a whole never met to vote on it. Passage of this legislation is only one of several PFAS policies Maine must move promptly to adopt, but it is an important action because it implements the "polluter pays" principle that underlies Maine's longstanding approach to cleaning up and paying for pollution. LD 363 and LD 627 could provide significant resources to farmers and others harmed by this ubiquitous and persistent family of chemicals so that they can clean up and restore their farms, and restore Maine's reputation for the highest quality farm products.

Thank you for your consideration. We urge an "ought to pass" recommendation on this important legislation.

Respectfully submitted,

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Attachment: Information on PFAS and COVID-19

APPENDIX TO IATP TESTIMONY ON LD 363 AND LD 627: Summary of scientific information on PFAS and COVID-19 severity and antibody response
Researched and written by Loren Yu, Colby College '23

Exposure to PFAS. COVID-19 has affected the United States tremendously, with 24.5 million total cases and as of February 8, 2021, at least 462,037 deaths. Scientists have been assiduously researching the behavior of the virus and what affects the severity of it. Severe illness from COVID-19 is often attributed to co-morbidities and old age, but the fact that environmental exposure to chemicals can affect the severity of the virus has been largely overlooked.

Per- and polyfluoroalkyl (PFAS) substances are a chemical group that have a strong carbon-fluorine bond that makes these substances extremely resistant to thermal, chemical, and biological degradation, which results in the bioaccumulation up the food chain and its persistence in human tissues for many years (Browne et al., 2020). PFAS is often used in surfactants, water repellent sprays, adhesives, paintings, and lubricants and are found in many consumer products including clothing, food packaging and cookware, as well as firefighting foams and industrial uses. Humans are exposed to PFAS through food and water contamination (Quinete and Hauster-Davis, 2020) and other sources including household dust. PFAS compounds are now detectable in the blood of virtually all Americans (98%) according to the U.S. Centers for Disease Control and Prevention (U.S. CDC), and because of its long biological half-lives in humans, it could stay in the body for 3.8 to 7.3 years (Browne et al., 2020), potentially causing a multitude of health problems.

PFAS' association with COVID-19. Research has found a strong association with PFAS and COVID-19 severity, antibody response, and asthma. In one study, Pentafluorobenzoic acid (PFBA) -- one of several thousand compounds in the PFAS class of chemicals -- detected in plasma showed the strongest association with the severity of COVID-19. The health consequences of PFBA are often overlooked due to its short elimination half-life in the blood compared to the other compounds, but in tissue samples from autopsies, PFBA is the only PFAS that is substantially accumulated in the lungs (Grandjean et al., 2020). COVID-19 affects the functioning of the lungs, where in severe cases, the lungs will inflame making it hard to breathe and potentially causing pneumonia. The positive association with PFBA concentration and COVID-19 severity suggests that PFBA could be heightening the damage to the lungs.

What makes the COVID-19 virus fatal is its potential to induce a cytokine storm, where the infection triggers the immune system to overload the bloodstream with cytokines, which are inflammatory proteins, resulting in tissue and organ damage. A cytokine storm results in fatal outcomes due to complications with lung inflammation, pneumonia, and respiratory issues. Perfluorooctane Sulfonate (PFOS), a PFAS compound, was found to alter cytokine production due to inconsistent production of specific cytokines (Bodin et al., 2016 and Zheng et al., 2011). PFAS affects the behavior of cytokines in the body, which could induce a cytokine storm while battling COVID-19, leading to a more severe case.

PFAS' effect on asthma. PFAS could also indirectly affect the severity of COVID-19 by worsening other physical ailments, such as asthma. PFAS compounds, Perfluorooctanoic acid (PFOA) and Perfluorooctane Sulfonate (PFOS), were associated with greater odds of asthma diagnosis in children age 3-5 and were positively associated with asthma severity scores among already asthmatic children aged 9-16 years (Dong et al., 2013). A biological explanation is based on limited evidence that suggests early-life exposure to these compounds could induce immune dysfunction. According to the U.S. CDC, people with moderate to severe asthma may be at higher risk from getting a severe case of COVID. Asthmatics with COVID-19 may find it extremely difficult to breathe, and they already have a higher risk of developing pneumonia due to previous lung damage.

PFAS' effect on antibody response. There has also been research into the effect of PFAS on antibodies. It was found that elevated PFAS exposure is associated with lower antibody responses to vaccinations in children and adults. The doubling of prenatal PFAS concentration was associated with a substantial decrease in antibody concentrations of diphtheria, a bacterial infection (Grandjean et al., 2012). Another study found a negative relationship between PFAS concentrations at delivery and children's anti-rubella antibody at three years of age (Granum et al., 2013). Such evidence suggests that PFAS reduces the antibody response for certain illnesses, raising the concern that PFAS may negatively affect the efficacy of the COVID-19 vaccines.

Conclusion. Most people are aware of the link between the severity of COVID-19 and pre-existing health conditions. However, evidence suggests that PFAS, a family of chemicals we are exposed to regularly, deteriorates immune functioning, including response to COVID-19. It is essential to focus on an individual's health when battling COVID-19, but it is also important to be mindful of the environmental contaminants we are perpetually exposed to, as we develop research and policy responses to the pandemic.

Bibliography

Bodin, J., Groeng, E., Andreassen, M., Dirven, H. and Nygaard, U., 2016. Exposure to perfluoroundecanoic acid (PFUnDA) accelerates insulinitis development in a mouse model of type 1 diabetes. *Toxicology Reports*, 3, pp.664-672. <https://pubmed.ncbi.nlm.nih.gov/28959590/>

Dong, G. H., Tung, K. Y., Tsai, C. H., Liu, M. M., Wang, D., Liu, W., Jin, Y. H., Hsieh, W. S., Lee, Y. L., & Chen, P. C. (2013). Serum polyfluoroalkyl concentrations, asthma outcomes, and immunological markers in a case-control study of Taiwanese children. *Environmental health perspectives*, 121(4), 507–513. <https://doi.org/10.1289/ehp.1205351>, <https://pubmed.ncbi.nlm.nih.gov/23309686/>

Grandjean, P., Timmermann, C., Kruse, M., Nielsen, F., Vinholt, P., Boding, L., Heilmann, C. and Molbak, K., (2020). Severity of COVID-19 at elevated exposure to perfluorinated alkylates. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7605584/>

Grandjean, P., Andersen, E. W., Budtz-Jørgensen, E., Nielsen, F., Mølbaek, K., Weihe, P., & Heilmann, C. (2012). Serum vaccine antibody concentrations in children exposed to

perfluorinated compounds. *JAMA*, 307(4), 391–397. <https://doi.org/10.1001/jama.2011.2034>
<https://pubmed.ncbi.nlm.nih.gov/22274686/>

Granum, B., Haug, L. S., Namork, E., Stølevik, S. B., Thomsen, C., Aaberge, I. S., van Loveren, H., Løvik, M., & Nygaard, U. C. (2013). Pre-natal exposure to perfluoroalkyl substances may be associated with altered vaccine antibody levels and immune-related health outcomes in early childhood. *Journal of immunotoxicology*, 10(4), 373–379.
<https://doi.org/10.3109/1547691X.2012.755580>, <https://pubmed.ncbi.nlm.nih.gov/23350954/>

Jackson-Browne, M., Eliot, M., Patti, M., Spanier, A. and Braun, J., 2020. PFAS (per- and polyfluoroalkyl substances) and asthma in young children: NHANES 2013–2014. *International Journal of Hygiene and Environmental Health*, 229, p.113565.
<https://www.sciencedirect.com/science/article/pii/S1438463920305113>

Quinete, N. and Hauser-Davis, R., 2020. Drinking water pollutants may affect the immune system: concerns regarding COVID-19 health effects. *Environmental Science and Pollution Research*, 28(1), pp.1235-1246. <https://link.springer.com/article/10.1007/s11356-020-11487-4>

Zheng, L., Dong, G., Zhang, Y., Liang, Z., Jin, Y. and He, Q., 2011. Type 1 and Type 2 cytokines imbalance in adult male C57BL/6 mice following a 7-day oral exposure to perfluorooctanesulfonate (PFOS). *Journal of Immunotoxicology*, 8(1), pp.30-38.
<https://pubmed.ncbi.nlm.nih.gov/21299352/>