Perinatal Care Matters

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SMART CHOICES FOR EATING FISH SAFELY

REGION 1
North Coast Perinatal Access System
415/ 478-3868

REGION 2
No. California Perinatal Outreach Program
916/ 733-1750

REGION 3
East Bay Regional Perinatal Program
510/ 204-3937

REGION 4
Mid-Coastal California Perinatal Outreach Prog.
650/ 723-5763

REGION 5
San Joaquin/Sierra Regional Perinatal Program
559/ 221-6315

REGION 6.1
Perinatal Outreach Education Program
562/ 595-6459

REGION 6.2
South Bay Perinatal Access Project
310/ 222-3651

REGION 6.3-6.6
PAC/LAC
818/ 788-6850

REGION 6.7
Community Perinatal Network
562/ 464-0042

REGION 7
Inland Counties Regional Perinatal Program
909/ 558-3970

REGION 8
Orange County Regional Perinatal Program
714/ 456-6706

REGION 9
San Diego/Imperial Counties Regional Perinatal System
858/ 536-5090

REGION 10
Northern Kaiser Permanente Regional Perinatal Program
510/ 987-3430

REGION 11
Southern Kaiser Permanente Regional Perinatal Program
626/ 405-6052

A variety of health and nutritional benefits are associated with fish consumption. However, these benefits can be compromised by the health risks of different toxic chemical contaminants found in many fish (a term that includes fresh and saltwater finfish, shellfish like clams, crustaceans like lobster, and other aquatic animal life). These mixed messages have promoted much confusion among both health care professionals and consumers. This article aims to provide health care professionals with tools and information to promote safe fish consumption.

Nutritional and Health Benefits

Fish provides high quality protein, vitamins, and minerals. Moreover fish can be a primary dietary source of omega-3 fatty acids, namely eicosahexaenoic acid (EPA) and docosahexaenoic acid (DHA). The amount of these fatty acids in fish can vary considerably, depending upon species, location and season of harvest, and diet [1]. Both EPA and DHA can be derived from the essential fatty acid alpha linolenic acid (an omega-3 fatty acid), but the conversion in the human body is not efficient and is further inhibited by the unfavorable overall fatty acid composition of the typical American diet. [1]

For cardiovascular benefits, the American Heart Association (AHA) recommends weekly consumption of two meals of fish high in omega 3 fatty acids to achieve an intake of 500 mg - 1 gm/day of EPA and DHA.[2] Recent research findings also highlight the importance of omega-3 fatty acids for preventing preterm labor, and for fetal and infant development.[3,4] DHA is highly concentrated in brain and retinal tissues, accumulating during late fetal life through the first two years of life. However, clinical studies on growth and neural development have yielded conflicting results on the requirements for omega 3 fatty acids in young infants, especially with respect to supplementing infant formulas with DHA. Healthy full term infants are able to convert alpha linolenic acid to DHA. Adequate maternal supplies of DHA can also ensure the availability of DHA to the fetus and to the breastfed infant. The International Society of the Study of Fatty Acids and Lipids recommends that pregnant and breastfeeding women receive 300 mg DHA per day. Fish can serve as a main food source of DHA, but fish oil supplements, plant foods high in alpha linolenic acid, e.g., walnuts, canola oil, flaxseed, and fortified products are alternative sources.[5]

Chemical Contaminants in Fish

Chemicals related to manufacturing, mining, logging, and agricultural, energy, and chemical production can reach waterbodies through direct runoff and airborne deposition and enter the food chain. As a result, fish can contain chemicals at levels that pose health concerns. Chemicals commonly found in fish include mercury and persistent organic pollutants. Persistent organic pollutants include chemicals such as polychlorinated biphenyls (PCBs), dioxins, polybrominated diphenyl ethers (PBDEs), and organochlorine pesticides, like DDT.

Fish is a major dietary source of methylmercury, the organic form of mercury. Since methylmercury accumulates through the food chain, fish that live a long time and that eat other fish can accumulate high levels of methylmercury. Mercury poses health concerns for the fetus, infant, and child because it can adversely affect neurodevelopment. Prenatal mercury exposure can cause adverse developmental or cognitive effects even at low does that do not result in effects in the mother. Based on blood levels measured between 1999-2004, the Centers for Disease Control (CDC) estimate that about 6% of women of childbearing age had mercury levels related to fish consumption that could increase the risk of their children having neurodevelopmental effects.[6] Although the prenatal period is the most sensitive period of exposure, exposure to mercury during childhood also poses potential health risks. Thus, it is advisable to reduce mercury exposure in women who may become pregnant, pregnant and breastfeeding women, infants, and children through adolescence.[7]

Excess mercury can also affect the nervous system in adults. Mild symptoms can include loss of sensation, tingling in hands and feet, tiredness, blurred vision, headaches, and memory loss. Mercury may also have negative effects on cardiovascular health.

Persistent organic pollutants are remarkably stable in the environment and can enter the food chain and build up in fatty tissues. Besides fish, they are also found in meats, eggs, and dairy products, and when eaten by humans, accumulate in our fatty tissues. Health effects associated with long-term, low-dose exposure to persistent

organic pollutants like PCBs include: cancer, liver damage, immunosuppression, hormone disruption, and reproductive abnormalities.[8] During pregnancy and lactation, mothers can pass these chemicals onto their infants. Chemicals like PCBs have been shown to affect growth and development in infants and children. Following the overall dietary recommendations to eat lower fat animal and dairy foods can help to reduce exposures to persistent organic pollutants. Levels of fat soluble chemicals in fish, like PCBs, can also be reduced by removing and discarding the skin, organs, and other fatty portions of fish and using cooking methods that allow fat drippings to drain away.

Recent reports of PBDEs and PCBs in farmed and wild salmon have also prompted consumer concern and confusion.[9,10,11] Higher levels of these persistent chemicals have been reported in farmed salmon primarily due to the concentrated fish feed they receive. Efforts to alternate fish feeds are in progress, but consumers can be encouraged to vary the types of fish eaten and to use methods described above to lower levels of fat soluble chemical in fish. Since mercury levels in salmon are very low and omega-3 fatty acid content is high, women can be encouraged to choose fresh, frozen, or canned wild salmon whenever possible.

Fish Consumption Recommendations

Sufficient dietary intake of omega 3 fatty acids necessary for the developing nervous system should be encouraged for pregnant and breastfeeding women . Health care providers can recommend women include moderate amounts of a variety of fish that are low in mercury and persistent organic pollutants. To help women and their families gain health benefits of eating fish and reduce exposures to mercury, the US Food and Drug Administration (USFDA) has issued advice about fish purchased from stores and restaurants and the US Environmental Protection Agency (USEPA) has issued advice for fish caught by self, family, or friends.(It is advisable for women who are planning to become pregnant to follow the recommendations one year before becoming pregnant, if possible, in order to reduce maternal stores of mercury. These recommendations are summarized in the table following.

The Environmental Health Investigations Branch has developed a brochure entitled ***Mercury in Fish.*** A copy of the brochure can be downloaded at its website listed below. For more information about fish contamination, contact:

- your local health department,
- Environmental Health Investigations Branch, CA Dept of Health Services at 510-620-3720; http://www.dhs.ca.gov/ps/deodc/ehib/index.htm, OR
- Office of Environmental Health Hazard Assessment, CalEPA at 916-327-7319 or 510-622-3170; http://www.oehha.ca.gov/fish.html for information about health advisories for fish from California waterbodies

For resources and training to groups and health professionals about fish contamination

- In Los Angeles and Orange Counties: The Fish Contamination Education Collaborative (FCEC) www.pvsfish.org or 213 620-2586
- Sacramento-San Joaquin Delta watershed in Northern California: The Delta Watershed Fish Project. http://ww.ehib.org/cma/project.jsp?project_key=DELTO1

ENVIRONMENTAL HEALTH BRANCH, CDHS; 510-620-3620
Full references and regional materials available at: www.perinatal.org

Safety Guidelines for Eating Fish:
Pregnant and Breastfeeding Women, Women Who Might Become Pregnant, and Young Children

DO NOT EAT shark, swordfish, tilefish, or king mackerel because of high mercury levels in these fish.

Fish You Buy in a Store or Restaurant	Fish Caught by Self, Friends or Family
You can eat up to 2 meals a week (12 ounces) of fish and shellfish bought in stores or restaurants.	Always follow health advisories for areas where fish were caught.
OR	
1 pound of uncooked fish is the same as 12 ounces of cooked fish. Canned tuna can be eaten as part of the 12 ounces of cooked fish per week (see additional tips below).	If there are no health advisories, you can eat up to 1 meal a week (6 ounces) of fish caught by yourself, family or friends.
Children and Teens Less than 17 Years Old (Same as above but serve smaller portions.)	

Tips for lowering chemicals from the fish you eat:

- Do not add the recommended amounts. For example if you eat a meal of fish caught by friends or family, do not eat any other fish that week.
- If you eat more than the recommended amount of fish in a week, eat less the next week.
- Eat store-bought farmed catfish, tilapia, wild salmon, pollock, shrimp, and scallops which have little or no mercury.
- Eat different kinds of fish.
- Eat chunk light tuna instead of albacore (solid white) tuna or tuna steaks - it has less mercury. **If you eat albacore tuna or tuna steaks, limit consumption to 6 ounces per week and eat no other fish that same week.**
- Eat smaller fish rather than larger fish which tend to have more chemicals.
- Throw away fatty parts of fish like the skin, guts, belly flap because chemicals like PCBs and pesticides build up in these parts. Also, bake, broil, grill or steam fish in a way that allows the fat to drip away.

BIRTH CERTIFICATE MATTERS

As many of you know the Office of Vital Records is conducting Phase III of the Birth Data Quality Regional Workshops. The importance of these meetings was made vivid by the opening remarks of Takashi Wada MD, MPH, Health Officer for the Pasadena Public Health Department on November 15th, during phase II. He said, "Today, we are here to learn about Vital Records. As the name implies, they truly are VITAL. They provide documentation of our existence – they mark when we enter the world and mark when we leave. Other important documents are based on this information – driver's licenses, passports, social security numbers. They give us proof of our identity and history. Together, they give us invaluable information about our population." Thinking on his words one must realize that the birth certificate is one of the most vital aspects of a person's history. However one must think beyond the importance of this document on a personal level and acknowledge that the birth certificate is the first relationship between public and personal health. For communities, the birth certificate identifies the demographics of our society, determines needs for health, social and educational interventions and paints the picture of our ever changing environment.

In 2006 new information can be reported on the birth certificate that will provide vital information about the health of the individuals and communities of California. The role of the provider (physician and nurse) is to ensure that birth clerks are aware of the "complications" of pregnancy and the newborn that can impact the long term health of the individual and the community. The birth certificate allows us the opportunity to gather information on prematurity, diabetes, birth defects and the individual factors that impacted the pregnancy and birth. Field 29 on the birth certificate is called Complications and Procedures of Pregnancy and Concurrent Illnesses. Codes exist that identify diabetes (prepregnancy or gestational), use of fertility enhancing drugs and/or techniques and infection (gonorrhea, chlamydia, hepatitis, HIV). Each of these complications is important to identify both on an individual level and on a community level. Interventions can be developed to intervene, but only if data is collected that identifies the problem. Field 30 identifies the Complications and procedures of Labor and Delivery. Anecdotally, hospital nurse managers report increase in inductions leading to increase in cesarean sections however without accurate identification of "induction of labor" (code 11 on field 30) does data exist to validate their assumption. Code 25 (mother transferred for delivery from another facility for maternal or fetal indications) is another key complication that is important to address when we assess systems of care. Having high risk pregnant women deliver in facilities that provide risk-appropriate care is essential. It is important to identify the need and capacity of hospitals to transport these complex perinatal patients to high-risk obstetrical and neonatal facilities.

The birth clerk has so much responsibility in identifying the vital issues of our community's health. It is VITAL that hospital providers assist in any way possible to ensure relevant indicators of health are 'counted' on all future birth certificates.

Submitted by: Ellen Silver, RNP Region 6: PAC/LAC

2007 BIRTH CERTIFICATE WORKSHOPS

As noted in the preceding article, the Office of Vital Records (OVR) is conducting Phase III of the Birth Data Quality Regional Workshops. These workshops will be held throughout California from March to September, 2006.

Workshop Locations

- March 2, 2006 in Fresno
- April 12, 2006 in Santa Rosa
- May 11, 2006 in Roseville
- June, 2006 in San Diego
- July 18, 2006 in Ventura
- Early September, 2006 in Alameda
- Mid-September, 2006 in Long Beach
- Santa Maria (TBD)

For additional information, including exact locations and dates please visit the RPPC website at www.perinatal.org

PREGNANCY-ASSOCIATED GINGIVITIS PREVENTABLE

Woman with gingivitis are at increased risk for preterm birth and delivery of a low birth weight (PT/LBW) infant, reported a study in the Journal of Periodontology. Dr. Nestor Lopez, of Chile, report evidence that some periodontal pathogens can cross the placental barrier and produce infection in the fetal membranes. Periodontal therapy significantly lowered the risk PT/LBW in their study. Randomized assignment of 870 pregnant women at low risk for PT/LBW but who had gingivitis, to no periodontal therapy (n = 290) or to perio-dontal therapy consisting of plaque control, scaling, and daily rinsing with 0.12% chlorhexidine before 28 weeks gestation with maintenance therapy as needed (n=580). The incidence of PT/LBW was markedly lower in the periodontal therapy group compared with the untreated control group (2.14% vs 6.71%). The odds ratio for PT/LBW was 3.26 with no periodontal therapy. The significant association between gingivitis and preterm birth remained strong after adjusting for the major risk factors for preterm delivery, "suggesting that gingivitis is an independent risk factor for PT/LBW," the investigators say. *J Periodontol* 2005;76:2144-2153.

PUBLIC POLICY ISSUES

Federal Medicaid Program

Congress passed the Budget Reconciliation Act February, 2006. Included within the budget act are significant changes in the Medicaid program. Each state will have the flexibility to determine how the Medicaid (Medi-Cal in California) program will be administered in the state including initiation of premiums, co-pays, and changes in eligibility as well as optional benefits under the program plan.

California Department of Health Services

Governor Schwartzenegger has been successful in negotiating additional federal funding for California through the State Medicaid Waiver. The State of California Department of Health Services is in the process of developing the goals and plan for this new funding opportunity. The department is inviting public input in the development of the *DHS Healthcare Coverage Initiative.* The meetings are scheduled for Sacramento and Los Angeles. The agenda includes: claiming and allocating Federal Funds, target populations, program design, participating providers. Detailed information is available at www.medi-calredesign.org

Assembly Initiatives

AB 2651, Jones Newborns: hearing screening. (Universal newborn hearing screening)
This bill would require newborn hearing screening be offered by every birthing center or clinic or general acute care hospital with licensed perinatal services in California.

AB 2742, Nava Family planning: Medi-Cal: Family PACT
This bill would require that family planning services and practice standards applicable to the Medi-Cal program be identical to those required pursuant to the Family PACT program, and would require the Office of Family Planning to establish standards and policies for clinical practice, quality assurance, and evaluation of the provision of family planning services for all state funded or administered family planning programs. Reimbursement would be on a fee-for-service basis.

AB 2818, Maze Maternal use of narcotics: testing.
This bill would require the State Department of Health Services, in consultation with the State Department of Alcohol and Drug Programs, to conduct a pilot program that would randomly select 12 health facilities to conduct random tests of mothers and their infants at birth to determine the prevalence of illegal narcotics use by expectant mothers, and to report the statistical results to the Legislature by January 1, 2008.

Senate Initiatives

SB 1785, Figueroa Human milk.
This bill would require a hospital that collects, processes, stores, or distributes human milk to comply with specified standards that are in effect on the effective date of the bill. It would exempt a hospital from the tissue bank licensure and regulation requirements. The bill would exempt from any screening test requirements, human milk that will be given to the infant of the woman who expressed the milk. This bill would take effect immediately as an urgency statute.

SB 1779, Alarcon Rural doctor incentive program.
This bill would declare the intent of the Legislature to implement a rural doctor incentive program.

SB 1748, Figueroa Cystic fibrosis: newborn screening.
This bill would require the department to expand statewide screening of newborns to include cystic fibrosis screening.

SB 1596, Runner Nurse-Family Partnership program.
This bill would establish the Nurse-Family Partnership program, which would be administered and implemented by the department, for purposes of making grants to eligible participating counties for the provision of voluntary registered nurse home visiting services for expectant first-time low-income mothers, their children, and their families.

Supported in part, by grants from the State of California, Department of Health Services: Maternal, Child & Adolescent Health Branch

SB 1597, Denham Taxation: Emergency Telephone Users Surcharge Act.
The Emergency Telephone Users Surcharge Act requires any person supplying intrastate telephone communication services, in the state to collect a surcharge imposed on amounts paid by every person for intrastate telephone communication service for future planned program appropriations including planned "911" emergency telephone number projects.

SB 1599, Ducheny Domestic violence prevention funding.
This bill would establish provisions, applicable to any county, for the assessment and collection of fees for the prevention, intervention, and prosecution of domestic violence.

SB 1615, Simitian State agencies: collection of data: ancestry or ethnic origin.
This bill would require that data collection specific to ancestry or ethnic origin is, at a minimum, (a) collected and tabulated according to standards defined by the Office of Management and Budgets current Statistical Policy Directive No. 15, Race and Ethnic Standards for Federal Statistics and Administrative Reporting and (b) Uses separate collection categories and tabulations for each major Asian/Pacific Islander group, including, but not limited to, Chinese, Japanese, Filipino, Korean, Vietnamese, Asian Indian, Hawaiian, Guamanian, Samoan, Laotian, and Cambodian.

SB 1622, Escutia Healthy Families Program and Medi-Cal: employee eligibility.
The bill would require California employers to provide an informational document, referred to as the "Employee Notification of Eligibility for Healthy Families/Medi-Cal," to all employees; and would also require the Employment Development Department to notify specified employers of requirements relating to the Employee Notification of Eligibility for Healthy Families / Medi-Cal.

SB 1638, Figueroa Midwives: supervision.
This bill would allow a client receiving services by a certified midwife to refuse the supervision of a physician and surgeon if the refusal is informed and in writing on department prescribed form.

SB 1668, Bowen Child death: review teams.
This bill would provide that an oral or written communication or a document shared within or produced by a child death review team related to a child death review, provided by a third party to the child death review team, or between a third party and a child review death team is confidential and not subject to disclosure or discoverable by a third party.

SB 1780, Alarcon Health facilities: nosocomial infections.
This bill would require that on and after January 1, 2008, each health facility transmit notification of a nosocomial infection to the Office of Statewide Health Planning and Development. This bill would also require that the office on or before January 1, 2009, and annually thereafter, compile this data and establish an aggregate nosocomial infection rate per health facility and transmit the aggregate nosocomial infection rate of each health facility to all applicable local health agencies.

Delta Watershed Fish Project

Sacramento-San Joaquin Delta Watershed in Northern California

Mercury, a potent neurotoxin, bioaccumulates in fish in the Sacramento-San Joaquin Delta watershed at levels that may pose health risks to people who consume the fish. Mercury is prevalent in the Delta watershed due primarily to historic mercury and gold mining. Once mercury enters an aquatic system, bacteria convert it into a highly toxic form that is readily accumulated by fish and other organisms. At many locations in the watershed, mercury concentrations in certain species of fish exceed the health-based guidelines set by the U.S. Environmental Protection Agency. Fish species of particular concern include largemouth bass, striped bass, catfish, and sturgeon. Based on preliminary data, these fish are commonly caught and consumed by many anglers and their families in the Delta watershed. Pregnant and nursing women, infants and young children need to be especially careful about limiting their exposure to mercury. Excessive exposure to mercury can harm the nervous system of the developing baby and children, leading to subtle decreases in learning ability, language skills, attention, and memory.

The Delta Watershed Fish Project is an inter-organizational effort to reduce exposure to mercury and other chemicals among populations that consume fish caught in the Delta watershed. The Environmental Health Investigations Branch (EHIB) of the California Department of Health Services, working in collaboration with federal, state, and local agencies, community-based organizations, and others, is undertaking a number of activities to address this concern. EHIB conducted needs assessments in the seven counties: Sacramento, San Joaquin, Lake, Placer, Yolo, Contra Costa, and Solano, to identify specific populations that consume fish caught in the Delta watershed and to understand their awareness, concerns, and information needs. Needs assessment findings are guiding the project's activities.

On-going project activities include:

- Convening a quarterly stakeholder advisory group that involves community members in developing outreach and education activities and materials.
- Convening a technical advisory group to guide research efforts and provide technical review of educational materials.
- Development of multi-lingual posters and postcards to raise community awareness about fish contamination problems in the Delta and to reduce exposure to mercury in fish.
- Development of a frequently asked questions resource guide about mercury in fish for social service and health care providers that serve populations consuming fish from the Delta watershed.
- Conducting trainings on fish contamination issues to staff of organizations and agencies working with populations at risk.
- Research to characterize fish consuming populations and their fish consumption patterns.

For more information about the Delta Watershed Fish Project or to identify ways to participate in this project, please contact:
Sun Lee (slee@dhs.ca.gov, 510-620-3658) or
May Lynn Tan (mtan@dhs.ca.gov, 510-620-3627).

The Fish Contamination Education Collaborative

In Los Angeles and Orange Counties

The Palos Verdes Shelf, located off the coast of Los Angeles, is among the largest contaminated sediment sites in the United States. From the late 1940s through the early 1980s, the Montrose Chemical Company discharged over 100 tons of DDTs into the sewer system that flowed into the Pacific Ocean. Also during this time, other industries released about 11 tons of PCBs. The contamination extends about one to three miles off the shore of the Palos Verdes Peninsula, reaching into Santa Monica Bay and the Los Angeles and Long Beach Harbors.

Fish that swim and feed in the water over contaminated sediments will generally have higher levels of these chemicals in their bodies. This area is heavily fished by subsistence anglers from the Chinese, Cambodian, Latino, Vietnamese, Filipino, Korean, and Pacific Islander communities. In addition to recreationally caught fish, some of the contaminated fish have shown up in local markets for consumer purchase. Women of childbearing age and youth under 17 are at greater risk for experiencing health effects from eating contaminated, locally caught fish on a regular basis.

Fish consumption advisories that inform people about limiting their consumption of certain fish are issued and posted for areas between Pt. Dume and Newport Beach. In general, people should avoid eating white croaker (also known as kingfish or tomcod), from areas around San Pedro and the Ports of Los Angles and Long Beach. In general, fish caught in this area tend to have higher levels of DDTs and PCBs than fish caught along other areas of the coast. Limited consumption of other fish, such as kelp bass, rockfishes, queenfish, black croaker, corbina, surf perches, and sculpin, is also recommended. For more information about the advisories, please visit pvsfish.org.

The Fish Contamination Education Collaborative (FCEC) is a participatory education project funded by the United States Environmental Protection Agency (US-EPA) to reduce exposures of populations eating fish caught from the Los Angeles and Orange County Coasts. With the goals of strengthening the ability of local government and communities to better address fish contamination issues now and in the future and conducting education with the most affected populations so they can make informed health decisions, FCEC implements several outreach programs. The Commercial Outreach Program works with local markets to promote the purchase of fish from reputable sources. The Angler Outreach Program conducts education directly with anglers on piers in the impacted areas. A Family Outreach program works with community based organizations and health professionals to reduce exposures of women of childbearing age and their families. For more information about FCEC, please visit their website at www.pvsfish.org or call Gina Margillo, FCEC Project Director, at 213-620-2586.

References for Smart Choice for Eating Fish Safely

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